

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11.9 G7
 Edition : 11.12.87
 Replaces : 18.8.87
 Test oil : ISO-4113
 Combination no. : 0 402 036 066
 Injection pump
 Pump designation : PES6P110A720/3LS477-
 2
 EP type number : 0 412 016 071
 Governor
 Governor design. : RQ250/1100PA845
 Governor no. : 0 421 801 380

Customer-spec. information
 Customer : MAN

Engine : D2866 F/UH

1st version kW : 177.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values ____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

AO1

Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 800

 Rack travel in mm : 11.70...11.80

 Del. quantity cm³/ : 12.3...12.6

 100 s : (12.0...12.8)

 Spread cm³ : 0.4

 100 s : (0.7)

2nd speed rpm : 250.0
 Rack travel in mm : 6.0...6.2
 Del. quantity cm³/ : 1.5...2.0
 100 s : (1.2...2.2)
 Spread cm³ : 0.4
 100 s : (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 800
 Del. quantity : 123.0...126.0
 1000 : (120.5...128.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version

Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:

1st rack travel in : 10.70
 Speed rpm : 1145...1160
 2nd rack travel in : 4.00
 Speed rpm : 1230...1260

4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.1

Testing:

Speed rpm : 100

Minimum rack trave: 7.60

Speed rpm : 250

Rack travel in mm : 6.00...6.20

Rack travel in mm : 2.00

Speed rpm : 320...360

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 800

Rack travel in m: 12.20...12.30

2nd speed rpm : 1100

Rack travel in m: 12.10...12.30

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100

Del.quantity cm3/ : 132.0...138.0

1000 s: (129.0...141.0)

Speed rpm : 500

Del.quantity cm3/ : 117.0...123.0

1000 s: (114.0...126.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70

Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 110.0...130.0

1000 s: (106.0...134.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 6.00...6.20

Del.quantity cm3/ : 15.0...20.0

1000 s: (12.5...22.5)

Spread cm3 : 4.50

1000 s: (7.50)

Remarks:

: MAN-NR. 2-7821

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 B2
 Edition : 11.12.87
 Replaces : 18.8.87
 Test oil : ISO-4113

Combination no. : 0 402 036 067

Injection pump
 Pump designation : PES6P110A720/3LS477-
 2
 EP type number : 0 412 016 071
 Governor
 Governor design. : RQV300...1100PA846
 Governor no. : 0 421 813 593

Customer-spec. information
 Customer : MAN

Engine : D2866 F

1st version kW : 177.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.70...11.80

Del.quantity cm3/ : 12.3...12.6

100 s: (12.0...12.8)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 1.5...2.0

100 s: (1.2...2.2)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.10...1.30

2nd speed rpm : 450
 travel mm : 2.90...3.30

3rd speed rpm : 900
 travel mm : 5.80...6.20

4th speed rpm : 1100
 travel mm : 7.50...7.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del.quantity : 123.0...126.0

1000 : (120.5...128.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 10.70

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 15...23

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 300

Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 305...460

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100

Del. quantity cm3/ : 132.0...138.0

1000 s: (129.0...141.0)

Speed rpm : 500

Del. quantity cm3/ : 117.0...123.0

1000 s: (114.0...126.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm3/ : 110.0...130.0

1000 s: (106.0...134.0)

LOW IDLE

A04

Speed rpm : 300

Rack travel in mm : 5.90...6.10

Del. quantity cm3/ : 15.0...20.0

1000 s: (12.5...22.5)

Spread cm3 : 4.50

1000 s: (7.50)

Remarks:

: MAN-NR. 2-7822

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9A28
Edition : 11.12.87
Replaces : 31.7.87
Test oil : ISO-4113

Combination no. : 0 402 036 069

Injection pump
Pump designation : PES6P120A720/3LS470-3

EP type number : 0 412 026 051
Governor
Governor design. : RQ300/1100PA679-2
Governor no. : 0 421 801 402

Customer-spec. information
Customer : MAN

Engine : D2866LUL/290

1st version kW : 213.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

A05

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 10.60...10.70

Del.quantity cm3/ : 18.3...18.5

100 s: (18.0...18.8)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.0...5.2

Del.quantity cm3/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1000

Del.quantity : 183.0...185.0

1000 : (180.0...188.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 9.60
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.1

Testing:

Speed rpm : 100
Minimum rack travel: 6.60
Speed rpm : 300
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 345...385

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.60...10.70
2nd speed rpm : 750
Rack travel in m: 11.20...11.40
3rd speed rpm : 925
Rack travel in m: 10.70...11.00

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 10.60...10.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.80...9.00
2nd pressure hPa : 210
Rack travel in m: 9.10...9.20
3rd pressure hPa : 375
Rack travel in m: 9.90...10.20

START CUT-OUT

Speed 1/min : 190 (210)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1100

A06

Del.quantity cm3/ : 190.0...196.0
1000 s: (187.0...199.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 174.0...180.0
1000 s: (171.0...183.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 119.0...121.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.60
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7878

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 G8
Edition : 22.01.88
Replaces : 6.11.87
Test oil : ISO-4113

Combination no. : 0 402 036 072

Injection pump
Pump designation : PES6P110A720/3LS477-
2

EP type number : 0 412 016 071
Governor
Governor design. : RQ250/1100PA845-1
Governor no. : 0 421 801 423

Customer-spec. information
Customer : MAN

Engine : D2566IUH/205

1st version kW : 150.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 10.30...10.40

Del. quantity cm3/ : 9.1...9.4

100 s: (8.8...9.6)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 5.9...6.1

Del. quantity cm3/ : 1.5...2.0

100 s: (1.2...2.2)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del. quantity : 91.0...94.0

1000 : (88.5...96.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 9.30

Speed rpm : 1145...1160

2nd rack travel in: 4.00

Speed rpm : 1205...1235

4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 315...355

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 800
Rack travel in m: 10.80...10.90
2nd speed rpm : 1100
Rack travel in m: 10.70...10.90

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100
Del.quantity cm3/ : 103.0...107.0
1000 s: (100.0...110.0)
Speed rpm : 500
Del.quantity cm3/ : 81.0...85.0
1000 s: (78.0...88.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.30
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 110.0...130.0
1000 s: (106.0...134.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10
Del.quantity cm3/ : 15.0...20.0
1000 s: (12.5...22.5)

Spread cm3 : 4.50
1000 s: (7.50)

Remarks:

:

APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9A31
Edition : 18.12.87
Replaces : -
Test oil : ISO-4113

Combination no. : 0 402 036 073

Injection pump
Pump designation : PES6P120A720/3LS470-
2
EP type number : 0 412 026 050
Governor
Governor design. : RQ300/1100PA813-4
Governor no. : 0 421 801 425

Customer-spec. information
Customer : MAN

Engine : D2866KUH

1st version kW : 265.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values ____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

A09

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 12.50...12.60

Del. quantity cm3/ : 23.8...24.0

100 s: (23.5...24.3)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.2...5.4

Del. quantity cm3/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 750

Rack travel in mm : 14.70...16.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1000

Del. quantity : 238.0...240.0

1000 : (235.0...243.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 750

Rack travel in mm : 15.5

Testing:

1st rack travel in: 11.30
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1185...1215
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.3

Testing:

Speed rpm : 100
Minimum rack travel: 6.80
Speed rpm : 300
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 400...440

TORQUE CONTROL

Dimension a mm : 0.35
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.30...12.40
2nd speed rpm : 750
Rack travel in m: 13.40...13.60
3rd speed rpm : 880
Rack travel in m: 13.10...13.30
4th speed rpm : 925
Rack travel in m: 12.50...12.80

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 12.50...12.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.50...8.70
2nd pressure hPa : 190
Rack travel in m: 8.90...9.00
3rd pressure hPa : 520
Rack travel in m: 11.10...11.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

A10

Aneroid pressure h: 1000
Speed rpm : 1100
Del.quantity cm3/ : 218.0...222.0
1000 s: (215.0...225.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 238.0...244.0
1000 s: (235.0...247.0)
Aneroid pressure h: 20
Speed rpm : 500
Del.quantity cm3/ : 191.0...197.0
1000 s: (188.0...200.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 119.0...121.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.20...5.40
Del.quantity cm3/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9A32
 Edition : 18.12.87
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 316
 Injection pump
 Pump designation : PES6P120A720LS470
 EP type number : 0 412 026 046
 Governor
 Governor design. : RQ250/1100PA658-11
 Governor no. : 0 421 801 295

Customer-spec. information
 Customer : MAN

Engine : D2866KF

1st version kW : 265.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750
 Rack travel in mm : 12.50...12.60
 Del. quantity cm³/ : 23.8...24.0
 100 s : (23.5...24.3)
 Spread cm³ : 0.5
 100 s : (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 5.2...5.4
 Del. quantity cm³/ : 1.2...1.8
 100 s : (0.9...2.1)
 Spread cm³ : 0.8
 100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Aneroid pressure h: 1000
 Del. quantity : 238.0...240.0
 1000 : (235.0...243.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version

Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
 1st rack travel in: 10.30

Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.3

Testing:

Speed rpm : 100
Minimum rack travel: 6.80
Speed rpm : 250
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 315...355

TORQUE CONTROL

Dimension a mm : 0.55
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 12.70...12.80
2nd speed rpm : 1100
Rack travel in m: 11.30...11.40
3rd speed rpm : 915
Rack travel in m: 12.30...12.50
4th speed rpm : 975
Rack travel in m: 11.60...11.90

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 12.50...12.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.40...9.50
2nd pressure hPa : 150
Rack travel in m: 9.60...9.70
3rd pressure hPa : 400
Rack travel in m: 10.90...11.30

START CUT-OUT

Speed 1/min : 190 (210)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000

A12

Speed rpm : 1100
Del.quantity cm3/ : 214.0...218.0
1000 s: (211.0...221.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 239.0...245.0
1000 s: (236.0...248.0)
Speed rpm : 500
Del.quantity cm3/ : 188.0...200.0
1000 s: (185.0...203.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 139.0...141.0
1000 s: (136.0...144.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.30
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.20...5.40
Del.quantity cm3/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7599

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 C
 Edition : 26.02.88
 Replaces : 9.10.87
 Test oil : ISO-4113

Combination no. : 0 402 046 331

Injection pump
 Pump designation : PES6P120A32ORS514
 EP type number : 0 412 026 052
 Governor
 Governor design. : RQV275...1000PA495-9
 Governor no. : 0 421 813 672

Customer-spec. information
 Customer : RVI

Engine : MIDR062045 K

1st version kW : 176.5
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 550

Rack travel in mm : 11.50...11.60

Del. quantity cm³/ : 16.5...16.7

100 s : (16.2...17.0)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 5.4...5.6

Del. quantity cm³/ : 1.4...2.0

100 s : (1.1...2.3)

Spread cm³ : 0.8

100 s : (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 275

travel mm : 1.40...1.60

2nd speed rpm : 500

travel mm : 3.80...4.30

3rd speed rpm : 800

travel mm : 5.70...6.10

4th speed rpm : 1000

travel mm : 7.10...7.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1120

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 550

Aneroid pressure h : 1000

Del. quantity : 165.0...167.0

1000 : (162.0...170.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 47...55

Testing:

1st rack travel in: 9.00

Speed rpm : 1075...1085

2nd rack travel in: 4.00

Speed rpm : 1165...1195

4th rack travel in: 1300

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 14...22

Testing:

Speed rpm : 200

Minimum rack travel: 7.20

Speed rpm : 275

Rack travel in mm : 5.40...5.60

CONSTANT REGULATION

Speed rpm : 285...400

TORQUE CONTROL

Dimension a mm : 1.50

Torque control curve - 1st version

1st speed rpm : 550

Rack travel in m: 11.50...11.60

2nd speed rpm : 1000

Rack travel in m: 9.90...10.00

3rd speed rpm : 700

Rack travel in m: 11.10...11.20

4th speed rpm : 850

Rack travel in m: 10.30...10.60

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Rack travel in mm : 1000

Contr.-rod trav.mm: 11.50...11.60

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 9.10...9.30

2nd pressure hPa : 280

Rack travel in m: 11.10...11.20°.

3rd pressure hPa : 120

Rack travel in m: 9.80...10.00

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000

Speed rpm : 1000

Del.quantity cm3/ : 153.0...157.0

1000 s: (150.0...160.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 106.0...108.0

1000 s: (103.0...111.0)

BREAKAWAY

1st version

Speed rpm : 1075...1085

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 135.0...165.0

1000 s: (135.0...165.0)

LOW IDLE

Speed rpm : 275

Rack travel in mm : 5.40...5.60

Del.quantity cm3/ : 14.0...20.0

1000 s: (11.0...23.0)

Spread cm3 : 8.00

1000 s: (12.00)

Remarks:

:

Start-of-delivery mark 10.5° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 A 8
Edition : 11.12.87
Replaces : 6.11.87
Test oil : ISO-4113

Combination no. : 0 402 046 332

Injection pump
Pump designation : PES6P120A32ORS419
EP type number : 0 412 026 037
Governor
Governor design. : RQ275/1050PA844-1
Governor no. : 0 421 801 421

Customer-spec. information
Customer : RVI

Engine : MIPRO62045A

1st version kW : 210.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 9.80...9.90

Del. quantity cm³/ : 17.7...17.9

100 s : (17.4...18.2)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 4.8...5.0

Del. quantity cm³/ : 1.7...2.3

100 s : (1.4...2.6)

Spread cm³ : 0.8

100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Aneroid pressure h : 700

Del. quantity : 177.0...179.0

1000 : (174.0...182.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in : 8.80

Speed rpm : 1110...1120

2nd rack travel in : 4.00

Speed rpm : 1185...1215
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 275

Rack travel in mm : 4.2

Testing:

Speed rpm : 200

Minimum rack travel: 5.90

Speed rpm : 275

Rack travel in mm : 4.10...4.30

Rack travel in mm : 2.00

Speed rpm : 310...350

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Rack travel in mm : 700

Contr.-rod trav.mm: 9.80...9.90

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 8.00...8.20

2nd pressure hPa : 360

Rack travel in m: 9.40...9.50

3rd pressure hPa : 160

Rack travel in m: 8.40...8.60

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 650

Del.quantity cm³/ : 162.0...168.0

1000 s: (159.0...171.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm³/ : 105.0...107.0

1000 s: (102.0...110.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.80

Speed rpm : 1110...1120

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 140.0...160.0

1000 s: (136.0...164.0)

LOW IDLE

Speed rpm : 275

Rack travel in mm : 4.10...4.30

Remarks:

:

Start-of-delivery mark 9.5° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 8,8 M 1
 Edition : 12.02.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 335
 Injection pump
 Pump designation : PES6P120A320RS515
 EP type number : 0 412 026 053
 Governor
 Governor design. : RQV300...1150PA527-2K
 Governor no. : 0 421 815 188

Customer-spec. information
 Customer : RVI

Engine : MIDRO62030C

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 10.20...10.30

Del. quantity cm³/ : 14.3...14.5

100 s : (14.0...14.8)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 600.0

Rack travel in mm : 4.6...4.8

Del. quantity cm³/ : 1.8...2.4

100 s : (1.5...2.7)

Spread cm³ : 0.8

100 s : (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.70...2.10

2nd speed rpm : 900

travel mm : 5.80...6.20

3rd speed rpm : 1150

travel mm : 7.40...7.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1225

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 143.0...145.0

1000 : (140.0...148.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 57...65

Testing:
1st rack travel in: 9.20
Speed rpm : 1235...1245
2nd rack travel in: 4.00
Speed rpm : 1305...1335
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 100
Minimum rack travel: 6.20
Speed rpm : 300
Rack travel in mm : 4.40...4.60

CONSTANT REGULATION
Speed rpm : 320...440

TORQUE CONTROL
Dimension a mm : 1.40
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.20...10.30
2nd speed rpm : 750
Rack travel in m: 9.20...9.30
3rd speed rpm : 500
Rack travel in m: 8.60...8.80
4th speed rpm : 350
Rack travel in m: 8.40...8.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 750
Del. quantity cm³/ : 119.0...125.0
1000 s: (116.0...128.0)
Speed rpm : 500
Del. quantity cm³/ : 67.0...73.0
1000 s: (64.0...76.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1235...1245

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 135.0...155.0
1000 s: (131.0...159.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.40...4.60
Del. quantity cm³/ : 13.0...19.0
1000 s: (10.0...22.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:
Start-of-delivery mark 6° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : UNI 9,5 A
 Edition : 23.2.88
 Replaces : 10.85
 Test oil : ISO-4113

Combination no. : 0 402 046 757

Injection pump
 Pump designation : PES6P110A72ORS3140
 EP type number : 0 412 016 716
 Governor
 Governor design. : RQV275...1100PAS01-2
 Governor no. : 0 421 813 462

Customer-spec. information
 Customer : IVECO-UNIC

Engine : 8460.21.102

1st version kW : 192
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values ____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)
 Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.70...11.80

Del. quantity cm³/ : 14.9...15.2

100 s : (14.6...15.4)

Spread cm³ : 0.4

100 s : (0.75)

2nd speed rpm : 275
 Rack travel in mm : 6.8...7.0
 Del. quantity cm³/ : 2.2...2.7
 100 s : (1.9...2.9)
 Spread cm³ : 0.45
 100 s : (0.75)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.0...1.2
 2nd speed rpm : 400
 travel mm : 2.7...3.0
 3rd speed rpm : 850
 travel mm : 5.0...5.2
 4th speed rpm : 1100
 travel mm : 6.8...7.0

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1260
 Rack travel in mm : 15.2...17.8

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Aneroid pressure h : 700
 Del. quantity : 149.0...152.0
 1000 : (146.5...154.5)
 Spread cm³ : 4.0
 1000 : (7.5)

RATED SPEED

1st version

Control lever
position degrees: 59...67

Testing:

1st rack travel in: 10.70
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 11...19

Testing:

Speed rpm : 100
Minimum rack travel: 8.40
Speed rpm : 275
Rack travel in mm : 6.80...7.00

CONSTANT REGULATION

Speed rpm : 280...525

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 11.70...11.80

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 10.50...10.60

2nd pressure hPa : 310

Rack travel in m: 11.40...11.50

3rd pressure hPa : 280

Rack travel in m: 10.80...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm³/ : 118.0...121.0
1000 s: (115.5...123.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70

A20

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...140.0
1000 s: (116.0...144.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 6.2 A
Edition : 09.03.87
Replaces : -
Test oil : ISO-4113

Combination no. : 0 402 046 781

Injection pump
Pump designation : PES6P110A320RS3182
EP type number : 0 412 016 719
Governor
Governor design. : RQV275...1175PA833
Governor no. : 0 421 813 583

Customer-spec. information
Customer : RVI

Engine : MIDR 060226

1st version kW : 151.0
Rated speed : 2350

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.80...4.90
: (4.75...4.65)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1175

Rack travel in mm : 13.80...13.90

Del. quantity cm³/ : 10.2...10.5

100 s: (9.9...10.7)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 275.0

Rack travel in mm : 6.2...6.4

Del. quantity cm³/ : 1.3...1.8

100 s: (1.0...2.0)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.20

2nd speed rpm : 450
travel mm : 3.50...3.90

3rd speed rpm : 800
travel mm : 5.50...5.90

4th speed rpm : 1175
travel mm : 7.80...8.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1250

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1175

Aneroid pressure h: 1000

Del. quantity : 102.0...105.0

1000 : (99.5...107.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 12.80
Speed rpm : 1245...1255
2nd rack travel in: 4.00
Speed rpm : 1395...1425
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 200
Minimum rack travel: 8.90
Speed rpm : 275
Rack travel in mm : 6.20...6.40

CONSTANT REGULATION
Speed rpm : 375...480

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 13.80...13.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.80...10.90
2nd pressure hPa : 500
Rack travel in m: 13.10...13.20
3rd pressure hPa : 240
Rack travel in m: 11.80...12.00

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 700
Del.quantity cm³/ : 102.0...106.0
1000 s: (99.0...109.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 48.0...51.0
1000 s: (45.5...53.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.80
Speed rpm : 1245...1255

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...150.0
1000 s: (116.0...154.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 6.20...6.40
Del.quantity cm³/ : 13.0...18.0
1000 s: (10.5...20.5)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 E
 Edition : 05.02.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 784

Injection pump
 Pump designation : PES6P120A32ORS3139
 EP type number : 0 412 026 718
 Governor
 Governor design. : RQV275...1000PA728-2
 Governor no. : 0 421 813 599

Customer-spec. information
 Customer : RVI

Engine : MIDR 062045 E

1st version kW : 236.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.20...11.300

Del. quantity cm3/ : 20.4...20.6

100 s: (20.1...20.9)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 5.1...5.3

Del. quantity cm3/ : 2.0...2.6

100 s: (1.7...2.9)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 0.90...1.10

2nd speed rpm : 450

travel mm : 3.30...3.70

3rd speed rpm : 800

travel mm : 5.60...6.00

4th speed rpm : 1000

travel mm : 7.00...7.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1000

Del. quantity : 204.0...206.0

1000 : (201.0...209.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 59...67

Testing:

1st rack travel in: 10.20

Speed rpm : 1065...1075

2nd rack travel in: 4.00

Speed rpm : 1180...1210

4th rack travel in: 1300

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 8...16

Testing:

Speed rpm : 200

Minimum rack travel: 6.90

Speed rpm : 275

Rack travel in mm : 5.10...5.30

CONSTANT REGULATION

Speed rpm : 230...320

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Rack travel in mm : 1000

Contr.-rod trav.mm: 11.20...11.30

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 8.20...8.30

2nd pressure hPa : 320

Rack travel in m: 10.50...10.60

3rd pressure hPa : 160

Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000

Speed rpm : 600

Del.quantity cm³/ : 202.0...208.0

1000 s: (199.0...211.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm³/ : 93.0...97.0

1000 s: (90.0...100.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.20

Speed rpm : 1065...1075

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 140.0...160.0

1000 s: (136.0...164.0)

LOW IDLE

Speed rpm : 275

Rack travel in mm : 5.10...5.30

Del.quantity cm³/ : 20.0...26.0

1000 s: (17.0...29.0)

Spread cm³ : 8.00

1000 s: (12.00)

Remarks:

:

Start-of-delivery mark 9° cam angle
after start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 6,2 B
 Edition : 05.06.87
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 785
 Injection pump
 Pump designation : PES6P110A32ORS3190
 EP type number : 0 412 016 720
 Governor
 Governor design. : RQV275...117SPA833-1
 Governor no. : 0 421 813 607

Customer-spec. information
 Customer : RVI

Engine : MIDR 060226

1st version kW : 154.5
 Rated speed : 2350

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness : 6.00x1.50x600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar : 25...27

Prestroke mm : 4.20...4.30
 : (4.15...4.35)
 Rack travel in mm : 18.00...21.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 4.50...5.00
 & maximum rack tra: 18.0...21.0
 Difference ° CS : 4.00...6.00

BASIC SETTING

1st speed rpm : 1175

 Rack travel in mm : 13.40...13.50

 Del. quantity cm3/ : 11.4...11.7

 100 s: (11.1...11.9)

 Spread cm3 : 0.4

 100 s: (0.7)

2nd speed rpm : 275.0
 Rack travel in mm : 4.0...4.2
 Del. quantity cm3/ : 1.5...2.0
 100 s: (1.2...2.2)
 Spread cm3 : 0.4
 100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 0.90...1.10
 2nd speed rpm : 450
 travel mm : 3.40...3.80
 3rd speed rpm : 800
 travel mm : 5.10...5.50
 4th speed rpm : 1175
 travel mm : 7.20...7.50

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1330
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1175

Aneroid pressure h: 1000
Del.quantity : 114.0...117.0
1000 : (111.5...119.5)
Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 49...57

Testing:
1st rack travel in: 12.40
Speed rpm : 1245...1255
2nd rack travel in: 4.00
Speed rpm : 1400...1430
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 200
Minimum rack travel: 6.60
Speed rpm : 275
Rack travel in mm : 4.00...4.20

CONSTANT REGULATION
Speed rpm : 250...320

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 13.40...13.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.60...10.80
2nd pressure hPa : 360
Rack travel in m: 12.60...12.70
3rd pressure hPa : 160
Rack travel in m: 11.50...11.80

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 700
Del.quantity cm3/ : 109.5...114.5
1000 s: (106.5...117.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 57.0...60.0
1000 s: (54.5...62.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.40
Speed rpm : 1245...1255

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 90.0...110.0
1000 s: (86.0...114.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 4.00...4.20
Del.quantity cm3/ : 15.0...20.0
1000 s: (12.5...22.5)
Spread cm3 : 4.50
1000 s: (7.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 6,2 C
 Edition : 30.03.87
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 786
 Injection pump
 Pump designation : PES6P110A32ORS3191
 EP type number : 0 412 016 721
 Governor
 Governor design. : RQV275...1250PA833-2
 Governor no. : 0 421 813 608

Customer-spec. information
 Customer : RVI

Engine : MIDR 060226

1st version kW : 175.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 4.40...4.50
 : (4.35...4.55)
 Rack travel in mm : 18.00...21.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 13.80...13.90
 Del. quantity cm³/ : 8.4...8.7
 100 s : (8.1...8.9)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 275.0
 Rack travel in mm : 4.8...5.0
 Del. quantity cm³/ : 1.9...2.4
 100 s : (1.6...2.6)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 0.80...1.20
 2nd speed rpm : 450
 travel mm : 3.00...3.40
 3rd speed rpm : 800
 travel mm : 4.60...5.00
 4th speed rpm : 1250
 travel mm : 7.50...7.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1360
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Aneroid pressure h : 1000
 Del. quantity : 84.0...87.0
 1000 : (81.5...89.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 50...5824

Testing:

1st rack travel in: 12.80
Speed rpm : 1315...1325
2nd rack travel in: 4.00
Speed rpm : 1455...1485
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 10...18

Testing:

Speed rpm : 200
Minimum rack travel: 7.10
Speed rpm : 275
Rack travel in mm : 4.80...5.00

CONSTANT REGULATION

Speed rpm : 280...320

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 13.80...13.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 13.10...13.20
2nd pressure hPa : 160
Rack travel in m: 13.50...13.60
3rd pressure hPa : 120
Rack travel in m: 13.20...13.40

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 750
Del.quantity cm3/ : 83.0...88.0
1000 s: (80.0...91.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm3/ : 59.0...62.0
1000 s: (56.5...64.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.80
Speed rpm : 1315...1325

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 90.0...110.0
1000 s: (86.0...114.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 4.80...5.00
Del.quantity cm3/ : 19.0...24.0
1000 s: (16.5...26.5)
Spread cm3 : 4.50
1000 s: (7.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 6,2 B 1
 Edition : 22.01.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 788
 Injection pump
 Pump designation : PES6P110A32ORS3190
 EP type number : 0 412 016 720
 Governor
 Governor design. : RQV275...117SPA833-3
 Governor no. : 0 421 813 656

Customer-spec. information
 Customer : RVI

Engine : MIDR 0602260

1st version kW : 151.0
 Rated speed : 2350

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 4.20...4.30
 : (4.15...4.35)
 Rack travel in mm : 18.00...21.00

B01

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 4.50...5.00
 & maximum rack tra: 18.0...21.0
 Difference ° CS : 4.00...6.00

BASIC SETTING

1st speed rpm : 1175

Rack travel in mm : 13.40...13.50

Del. quantity cm³/ : 11.6...11.9

100 s: (11.3...12.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 275.0

Rack travel in mm : 4.0...4.2

Del. quantity cm³/ : 1.7...2.2

100 s: (1.4...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 0.90...1.10

2nd speed rpm : 450

travel mm : 3.40...3.80

3rd speed rpm : 800

travel mm : 5.10...5.50

4th speed rpm : 1175

travel mm : 7.20...7.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1330

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1175

Aneroid pressure h: 1000
Del. quantity : 116.0...119.0
1000 : (113.5...121.5)
Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 52...60

Testing:
1st rack travel in: 12.40
Speed rpm : 1245...1255
2nd rack travel in: 4.00
Speed rpm : 1400...1430
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 14...22

Testing:
Speed rpm : 200
Minimum rack travel: 6.60
Speed rpm : 275
Rack travel in mm : 4.00...4.20

CONSTANT REGULATION
Speed rpm : 250...320

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 13.40...13.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.10...10.30
2nd pressure hPa : 360
Rack travel in m: 12.60...12.70
3rd pressure hPa : 160
Rack travel in m: 11.00...11.40

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 700
Del. quantity cm3/ : 111.5...116.5
1000 s: (108.5...119.5)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm3/ : 51.0...54.0
1000 s: (48.5...56.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.40
Speed rpm : 1245...1255

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 90.0...110.0
1000 s: (86.0...114.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 4.00...4.20
Del. quantity cm3/ : 17.0...22.0
1000 s: (14.5...24.5)
Spread cm3 : 4.50
1000 s: (7.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 12,0 F2
Edition : 05.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 402 046 791

Injection pump
Pump designation : PES6P120A320RS3139
EP type number : 0 412 026 718
Governor
Governor design. : RQV275...950PA728-4
Governor no. : 0 421 813 678

Customer-spec. information
Customer : RVI

Engine : MIDR 063540 H

1st version kW : 264.0
Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 950

Rack travel in mm : 13.30...13.40

Del. quantity cm3/ : 24.9...25.1

100 s: (24.6...25.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 5.6...5.8

Del. quantity cm3/ : 2.2...2.8

100 s: (1.9...3.1)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.20

2nd speed rpm : 450
travel mm : 3.30...3.80

3rd speed rpm : 800
travel mm : 5.80...6.00

4th speed rpm : 950
travel mm : 6.80...6.90

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 1140

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 950

Aneroid pressure h: 1000

Del. quantity : 249.0...251.0

1000 : (246.0...254.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 58...66

Testing:

1st rack travel in: 12.30

Speed rpm : 1015...1025

2nd rack travel in: 4.00

Speed rpm : 1160...1190

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 8...16

Testing:

Speed rpm : 200

Minimum rack travel: 7.40

Speed rpm : 275

Rack travel in mm : 5.60...5.80

CONSTANT REGULATION

Speed rpm : 295...400

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Rack travel in mm : 1000

Contr.-rod trav.mm: 13.30...13.40

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 9.50...9.60

2nd pressure hPa : 660

Rack travel in m: 12.60...12.70

3rd pressure hPa : 200

Rack travel in m: 10.30...10.50

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000

Speed rpm : 600

Del.quantity cm3/ : 255.0...261.0

1000 s: (252.0...264.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 120.0...122.0

1000 s: (117.0...125.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.30

Speed rpm : 1015...1025

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...160.0

1000 s: (136.0...164.0)

LOW IDLE

Speed rpm : 275

Rack travel in mm : 5.60...5.80

Del.quantity cm3/ : 22.0...28.0

1000 s: (19.0...31.0)

Spread cm3 : 8.00

1000 s: (12.00)

Remarks:

:

Start-of-delivery mark 9° cam angle
after start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 A11
 Edition : 07.01.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 793
 Injection pump
 Pump designation : PES6P110A820LS3131
 EP type number : 0 412 016 715
 Governor
 Governor design. : RQ300/1100PA800-1
 Governor no. : 0 421 801 426

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM447h

1st version kW : 150.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.30...4.40
 : (4.25...4.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.90...10.00

Del.quantity cm3/ : 10.9...11.1

100 s: (10.6...11.3)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm3 : 0.4

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 13.00...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 109.0...111.0

1000 : (106.5...113.5)

Spread cm3 : 4.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 13.5

Testing:

1st rack travel in: 8.90

Speed rpm : 1145...1160

2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.2

Testing:
Speed rpm : 200
Minimum rack trave: 9.50
Speed rpm : 300
Rack travel in mm : 7.10...7.30
Rack travel in mm : 2.00
Speed rpm : 360...400

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 80.0...84.0
1000 s: (77.0...87.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.90
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 9,6 V 1
 Edition : 29.01.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 794
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA862-1
 Governor no. : 0 421 813 684

Customer-spec. information
 Customer : KHD

Engine : BF6L513 R/C

1st version kW : 150.0
 Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 12.40...12.50

Del. quantity cm³/ : 13.1...13.3

100 s : (12.8...13.6)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del. quantity cm³/ : 1.6...2.2

100 s : (1.3...2.4)

Spread cm³ : 0.4

100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.10...1.50

2nd speed rpm : 450

travel mm : 2.60...3.20

3rd speed rpm : 700

travel mm : 4.80...5.40

4th speed rpm : 1110

travel mm : 7.90...8.10

5th speed rpm : 1230

travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1040

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del. quantity : 131.0...133.0

1000 : (128.0...136.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 49...57

Testing:

1st rack travel in: 11.40

Speed rpm : 1110...1120

2nd rack travel in: 4.00

Speed rpm : 1215...1225

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 16...24

Testing:

Speed rpm : 100

Minimum rack trave: 9.10

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...480

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600

Del. quantity cm3/ : 131.0...137.0

1000 s: (128.0...140.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.40

Speed rpm : 1110...1120

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm3/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 14,9 H
 Edition : 15.01.88
 Replaces : 10.8.87
 Test oil : ISO-4113

Combination no. : 0 402 048 705

Injection pump
 Pump designation : PES8P120A320RS3199
 EP type number : 0 412 028 705
 Governor
 Governor design. : RQV275...1050PA665
 Governor no. : 0 421 813 370

Customer-spec. information
 Customer : RVI

Engine : MIVRO83530

1st version kW : 320.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 4- 2- 7- 3-
 6- 5

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 11.40...11.50

Del. quantity cm³/ : 20.2...20.4

100 s: (19.9...20.7)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 275.0
 Rack travel in mm : 4.1...4.3
 Del. quantity cm³/ : 1.7...2.3
 100 s: (1.4...2.6)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 275
 travel mm : 1.40...1.60
 2nd speed rpm : 450
 travel mm : 3.40...3.80
 3rd speed rpm : 800
 travel mm : 5.60...6.00
 4th speed rpm : 1050
 travel mm : 7.50...7.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1140
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1050
 Aneroid pressure h: 700
 Del. quantity : 202.0...204.0
 1000 : (199.0...207.0)

Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 62...70

Testing:

1st rack travel in: 10.40
Speed rpm : 1115...1125
2nd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 7...15

Testing:

Speed rpm : 200
Minimum rack travel: 5.60
Speed rpm : 275
Rack travel in mm : 3.80...4.00

CONSTANT REGULATION

Speed rpm : 280...405

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 11.40...11.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.70...8.90
2nd pressure hPa : 420
Rack travel in m: 10.60...10.70
3rd pressure hPa : 360
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 650

B10

Del.quantity cm3/ : 188.0...196.0
1000 s: (185.0...199.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 110.0...112.0
1000 s: (107.0...115.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 160.0...190.0
1000 s: (156.0...194.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 3.80...4.00

Remarks:

:
Start-of-delivery mark 13° cam angle
after start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,7 E 1
Edition : 07.01.88
Replaces : 2.11.87
Test oil : ISO-4113

Combination no. : 0 402 076 724

Injection pump
Pump designation : PES6P110A82QLS3131-1
EP type number : 0 412 016 717
Governor
Governor design. : RSV350...750POAS36
Governor no. : 0 421 833 279

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM447

1st version kW : 129.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.30...4.40
: (4.25...4.45)
Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.70...12.80

Del.quantity cm³/ : 14.5...14.7

100 s: (14.2...14.9)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 350.0

Rack travel in mm : 6.9...7.1

Del.quantity cm³/ : 1.4...2.0
100 s: (1.1...2.3)

Spread cm³ : 0.4
100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 145.0...147.0

1000 : (142.5...149.5)

Spread cm³ : 4.00

1000 : (8.00)

RATED SPEED

1st version

Control lever

position degrees: 24...32

Testing:

1st rack travel in: 11.70

Speed rpm : 750...755
2nd rack travel in: 4.00
Speed rpm : 775...788
4th rack travel in: 900
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 13...21

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 7.0

Testing:

Speed rpm : 100

Minimum rack trave: 18.00

Speed rpm : 350

Rack travel in mm : 6.90...7.10

Rack travel in mm : 2.00

Speed rpm : 360...400

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.20

Speed rpm : 740...750

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 130.0...150.0

1000 s: (126.0...154.0)

Remarks:

:

Observe VDT-I-420/120

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 22,0 A
Edition : 19.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 402 640 810

Injection pump
Pump designation : PE12P120A32OLS7814
EP type number : 0 412 620 813
Governor
Governor design. : RQV350...1050PA870-1
Governor no. : 0 421 813 680

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 444 LA

1st version kW : 611.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.80...4.90
: (4.75...4.95)
Rack travel in mm : 19.00...21.00
Firing order : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
180-225-240-285-300-
345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 12.50...12.70

Del. quantity cm3/ : 24.5...24.7

100 s: (24.2...25.0)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 4.4...4.8

Del. quantity cm3/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm3 : 0.6

100 s: (1.0)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
travel mm : 1.90...2.10

2nd speed rpm : 700
travel mm : 4.10...4.50

3rd speed rpm : 1100
travel mm : 7.60...8.00

4th speed rpm : 1200
travel mm : 9.50...9.90

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 650
Aneroid pressure h: 1100
Del. quantity : 245.0...247.0
1000 : (242.0...250.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 64...72

Testing:
1st rack travel in: 12.20
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 14...22

Testing:
Speed rpm : 200
Minimum rack travel: 6.60
Speed rpm : 350
Rack travel in mm : 4.40...4.80

CONSTANT REGULATION
Speed rpm : 350...600

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1030
Rack travel in m: 13.10...13.30
2nd speed rpm : 900
Rack travel in m: 13.30...13.50

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Rack travel in m: 1100
Contr.-rod trav. mm: 12.50...12.70

Measurement
Speed 1/min : 600

1st pressure hPa : 400
Rack travel in m: 8.60...8.80
2nd pressure hPa : 670
Rack travel in m: 11.50...11.70

3rd pressure hPa : 1550
Rack travel in m: 12.80...13.00
4th pressure hPa : -
Rack travel in m: 7.30...7.50

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1800
Speed rpm : 1050
Del. quantity cm3/ : 268.0...272.0
1000 s: (265.0...275.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1800
Speed rpm : 800
Del. quantity cm3/ : 270.0...273.0
1000 s: (267.0...276.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 800
Speed rpm : 1050
Del. quantity cm3/ : 174.0...176.0
1000 s: (171.0...179.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm3/ : 121.0...123.0
1000 s: (118.0...126.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.20
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 260.0...280.0
1000 s: (256.0...284.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 T 2
 Edition : 19.02.88
 Replaces : 27.3.87
 Test oil : ISO-4113

Combination no. : 0 402 646 843

Injection pump
 Pump designation : PE6P120A320LS7808
 EP type number : 0 412 626 816
 Governor
 Governor design. : RQV300...1050PA797-2
 Governor no. : 0 421 813 614

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM441 LA

1st version kW : 240.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

-360
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 13.80...14.00

Del.quantity cm3/ : 20.9...21.1

100 s: (20.6...21.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.5...5.8

Del.quantity cm3/ : 1.6...2.2
 100 s: (1.3...2.5)

Spread cm3 : 0.6
 100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 600
 travel mm : 4.90...5.10

3rd speed rpm : 1075
 travel mm : 7.40...7.60

4th speed rpm : 1100
 travel mm : 8.00...8.40

5th speed rpm : 1150
 travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 600
 Rack travel in mm : 15.80...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 600
Aneroid pressure h: 800
Del.quantity : 209.0...211.0
1000 : (206.0...214.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 36...44

Testing:
1st rack travel in: 13.60
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 100
Minimum rack trave: 7.00
Speed rpm : 300
Rack travel in mm : 5.50...5.80

CONSTANT REGULATION
Speed rpm : 300...450

TORQUE CONTROL
Dimension a mm : 0.30
2nd speed rpm : 1050
Rack travel in m: 14.60...14.80
3rd speed rpm : 800
Rack travel in m: 15.90...15.10
4th speed rpm : 700

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Rack travel in m: 800
Contr.-rod trav.mm: 13.80...14.00

Measurement
Speed 1/min : 600

1st pressure hPa : 300
Rack travel in m: 10.70...10.90
2nd pressure hPa : 550
Rack travel in m: 12.60...12.80

3rd pressure hPa : 975
Rack travel in m: 13.90...14.00
4th pressure hPa : 1100
Rack travel in m: 14.40...14.60
5th pressure hPa : -
Rack travel in m: 8.80...9.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1300
Speed rpm : 1050
Del.quantity cm3/ : 231.0...234.0
1000 s: (228.0...237.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1300
Speed rpm : 800
Del.quantity cm3/ : 238.0...242.0
1000 s: (235.0...245.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 133.0...135.0
1000 s: (130.0...138.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 13.60
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SCA 11,1 C
 Edition : 05.02.88
 Replaces : 2.11.87
 Test oil : ISO-4113
 Combination no. : 0 402 646 845
 Injection pump
 Pump designation : PE6P120A720RS7139
 EP type number : 0 412 626 819
 Governor
 Governor design. : RQV200...1000PA725-2
 Governor no. : 0 421 813 632

Customer-spec. information
 Customer : SAAB-SCANIA

Engine : DSC11 13

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 15.20...15.30
 Del. quantity cm³/ : 23.6...23.8
 100 s : (23.3...24.1)
 Spread cm³ : 0.6
 100 s : (0.9)

2nd speed rpm : 225.0
 Rack travel in mm : 5.5...5.7
 Del. quantity cm³/ : 1.8...2.2
 100 s : (1.5...2.5)
 Spread cm³ : 0.3
 100 s : (0.6)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 225
 travel mm : 1.20...1.60
 2nd speed rpm : 350
 travel mm : 2.40...3.00
 3rd speed rpm : 650
 travel mm : 4.50...5.10
 4th speed rpm : 1045
 travel mm : 8.40...8.60
 5th speed rpm : 1170
 travel mm : 10.10...10.50

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1040
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h : 900
 Del. quantity : 236.0...238.0
 1000 : (233.0...241.0)

Spread cm3 : 6.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 59...67

Testing:
1st rack travel in: 14.20
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 7...15

Testing:
Speed rpm : 100
Minimum rack travel: 7.00
Speed rpm : 225
Rack travel in mm : 5.50...5.70
Rack travel in mm : 2.00
Speed rpm : 410...470

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 15.20...15.30

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.40...12.50
2nd pressure hPa : 535
Rack travel in m: 14.60...14.70
3rd pressure hPa : 290
Rack travel in m: 13.10...13.30

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 1000
Del.quantity cm3/ : 226.0...234.0
1000 s: (224.0...236.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm3/ : 169.0...173.0
1000 s: (167.0...175.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 14.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 240.0...290.0
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 225
Rack travel in mm : 5.50...5.70
Del.quantity cm3/ : 18.0...22.0
1000 s: (15.0...25.0)
Spread cm3 : 3.00
1000 s: (6.00)

Remarks:
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on August 20, 1987.
Start of delivery - engine: 15° before
TDC
Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 16,2 B
Edition : 12.02.88
Replaces : 20.11.87
Test oil : ISO-4113

Combination no. : 0 402 646 857

Injection pump
Pump designation : PE6P130A72ORS7150
EP type number : 0 412 636 808
Governor
Governor design. : RQV250...900PA881
Governor no. : 0 421 813 676

Customer-spec. information
Customer : VOLVO-PENTA

Engine : TAMD 162 (HD)

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
: (3.55...3.75)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.20...10.30

Del. quantity cm³/ : 29.2...29.4

100 s: (28.8...29.8)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 3.7...3.9

Del. quantity cm³/ : 1.7...2.2

100 s: (1.4...2.4)

Spread cm³ : 0.5

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 0.90...1.30

2nd speed rpm : 350

travel mm : 2.00...2.60

3rd speed rpm : 700

travel mm : 4.40...5.00

4th speed rpm : 925

travel mm : 7.30...7.50

5th speed rpm : 985

travel mm : 8.10...8.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 980

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 900

Del. quantity : 292.0...294.0

1000 : (288.0...298.0)

Spread cm3 : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 55...63

Testing:
1st rack travel in: 9.20
Speed rpm : 920...925
2nd rack travel in: 4.00
Speed rpm : 970...1000
4th rack travel in: 1100
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 100
Minimum rack travel: 5.30
Speed rpm : 250
Rack travel in mm : 3.70...3.90

CONSTANT REGULATION
Speed rpm : 250...360

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 10.20...10.30

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 7.60...7.80
2nd pressure hPa : 335
Rack travel in m: 7.80...8.00
3rd pressure hPa : 665
Rack travel in m: 9.80...10.00

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 192.5...195.5
 1000 s: (189.0...199.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 920...925

STARTING FUEL DELIVERY

Speed rpm : 100

LOW IDLE

Speed rpm : 250
Rack travel in mm : 3.70...3.90
Del.quantity cm3/ : 17.0...22.0
 1000 s: (14.5...24.5)
Spread cm3 : 5.00
 1000 s: (7.00)

Remarks:

:
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SCA 14,2 D
Edition : 24.2.88
Replaces : 26.8.87
Test oil : ISO-4113

Combination no. : 0 402 648 807

Injection pump
Pump designation : PE8P120A920/4LS7008
EP type number : 0 412 628 803
Governor
Governor design. : RGV200...950PAS47-1
Governor no. : 0 421 813 360

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 01

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar : 25...27

Prestroke mm : 4,50...4,60
: (4,45...4,65)
Rack travel in mm : 6,00...8,00

Firing order : 1-2-7-3-4-5-6-8

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 7.00...13.90
& maximum rack tra: 21.00
Difference ° CS : 1.45...2.15

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.90...14.00

Del. quantity cm³/ : 19.7...19.9

100 s: (19.4...20.2)

Spread cm³ : 0,7

100 s: (1,0)

2nd speed rpm : 225
Rack travel in mm : 4.70...4.90
Del. quantity cm³/ : 1.4...1.8

100 s: (-)

Spread cm³ : 0,3
100 s: (0,6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 225
travel mm : 1...30...1.50
2nd speed rpm : 270
travel mm : 1.90...2.10
3rd speed rpm : 360
travel mm : 2.60...3.00
4th speed rpm : 990
travel mm : 7.80...8.00
5th speed rpm : 1120
travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1040
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700

Aneroid pressure h: 900
Del. quantity : 197.0...199.0
1000 : (194.0...202.0)
Spread cm3 : 7.0
1000 : (10.0)

RATED SPEED

1st version
Control lever
position degrees: 56...64

Testing:
1st rack travel in: 12.90
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1110...1140
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 100
Minimum rack travel: 6.20
Speed rpm : 225
Rack travel in mm : 4.70...4.90
Rack travel in mm : 2.00
Speed rpm : 330...390

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav. mm: 13.90...14.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.00...11.10
2nd pressure hPa : 335
Rack travel in m: 13.10...13.20
3rd pressure hPa : 215
Rack travel in m: 11.60...11.80

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 950
Del. quantity cm3/ : 190.0...198.0
1000 s: (188.0...200.0)

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Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm3/ : 146.0...150.0
1000 s: (144.0...152.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.90
Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 240.0...290.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 225
Rack travel in mm : 4.70...4.90
Del. quantity cm3/ : 14.0...18.0
1000 s: (-)
Spread cm3 : 3.0
1000 s: (6.0)

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on 1986-06-09
Engine firing sequence: 1-5-4-2-6-3-7-8

Start of delivery - engine: 22° before
TDC at control-rod travel = 6.0...
8.0 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SCA 14,2 D2
Edition : 12.02.88
Replaces : 9.10.87
Test oil : ISO-4113

Combination no. : 0 402 648 815

Injection pump
Pump designation : PE8P120A920/4LS7008X
EP type number : 0 412 628 812
Governor
Governor design. : RQV200...950PA547-6
Governor no. : 0 421 813 499

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 02

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 4.50...4.60
: (4.45...4.65)

Rack travel in mm : 6.00...8.00

Firing order : 1- 2- 7- 3- 4- 5-
6- 8

Phasing : 0-45-90-135-180-225-
270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 7.00...12.80
& maximum rack tra: 21.00
Difference ° CS : 1.05...1.75

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.80...12.90

Del. quantity cm³/ : 18.3...18.5

100 s: (18.0...18.8)

Spread cm³ : 0.7

100 s: (1.0)

2nd speed rpm : 225.0

Rack travel in mm : 4.7...4.9

Del. quantity cm³/ : 1.4...1.8

100 s: (-)

Spread cm³ : 0.3

100 s: (0.6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 225
travel mm : 1.30...1.40

2nd speed rpm : 260
travel mm : 1.70...1.90

3rd speed rpm : 360
travel mm : 2.60...3.00

4th speed rpm : 1000
travel mm : 7.90...9.00

5th speed rpm : 1110
travel mm : 9.30...9.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1040

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Aneroid pressure h: 900
Del.quantity : 183.0...185.0
1000 : (180.0...188.0)
Spread cm3 : 7.00
1000 : (10.00)

RATED SPEED

1st version
Control lever
position degrees: 55...63

Testing:
1st rack travel in: 11.80
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1090...1120
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 100
Minimum rack travel: 6.20
Speed rpm : 225
Rack travel in mm : 4.70...4.90
Rack travel in mm : 2.00
Speed rpm : 330...390

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 12.80...12.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.00...11.10
3rd pressure hPa : 215
Rack travel in m: 11.60...11.80

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 950

Del.quantity cm3/ : 177.0...185.0
1000 s: (175.0...187.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 146.0...150.0
1000 s: (144.0...152.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.80
Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 240.0...290.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 225
Rack travel in mm : 4.70...4.90
Del.quantity cm3/ : 14.0...18.0
1000 s: (-)
Spread cm3 : 3.00
1000 s: (6.00)

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on May 3, 1985

Start of delivery - engine: 22° before
TDC at control-rod travel = 6.0...

8.0 mm

Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SCA 14.0 H
Edition : 29.01.88
Replaces : 9.3.87
Test oil : ISO-4113

Combination no. : 0 402 648 826

Injection pump
Pump designation : PE8P120A920/4LS712SS
EP type number : 0 412 628 815
Governor
Governor design. : RQV200...950PA736-1
Governor no. : 0 421 813 551

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 05

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
: (4.95...5.15)
Rack travel in mm : 9.00...12.00

B28

Firing order : 1- 2- 7- 3- 4- 5-
6- 8

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.30...13.40

Del. quantity cm³/ : 20.9...21.1

100 s: (20.6...21.4)

Spread cm³ : 0.6

100 s: (0.9)

2nd speed rpm : 225.0
Rack travel in mm : 5.1...5.3
Del. quantity cm³/ : 1.6...2.0
100 s: (-)
Spread cm³ : 0.3
100 s: (0.6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 225
travel mm : 1.30...1.40
2nd speed rpm : 330
travel mm : 2.40...2.70
3rd speed rpm : 420
travel mm : 3.10...3.40
4th speed rpm : 1000
travel mm : 7.90...8.10
5th speed rpm : 1120
travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1040
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Aneroid pressure h: 900
Del. quantity : 209.0...211.0
1000 : (206.0...214.0)

Spread cm³ : 6.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 56...64

Testing:
1st rack travel in: 12.30
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1100...1130
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 225
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 340...400

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 13.30...13.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.20...11.30
2nd pressure hPa : 365
Rack travel in m: 12.80...12.90
3rd pressure hPa : 215
Rack travel in m: 11.90...12.10

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 950
Del.quantity cm³/ : 199.0...207.0
1000 s: (197.0...209.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 158.0...162.0
1000 s: (156.0...164.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.30
Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 240.0...290.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 225
Rack travel in mm : 4.90...5.10

Remarks:

:
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on August 20, 1987.

Start of delivery - engine: 16° before
TDC
Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 A 7
Edition : 26.02.88
Replaces : 26.6.87
Test oil : ISO-4113

Combination no. : 0 402 648 834

Injection pump
Pump designation : PE8P120A32QLS7801-1
EP type number : 0 412 628 818
Governor
Governor design. : RQV350..900PA866-1
Governor no. : 0 421 813 629

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 A

1st version kW : 267.0
Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)
Rack travel in mm : 20.00...21.00
Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 880
Rack travel in mm : 13.80...13.90
Del. quantity cm³/ : 20.3...20.5
100 s: (20.0...20.8)
Spread cm³ : 0.5
100 s: (0.9)

2nd speed rpm : 350.0
Rack travel in mm : 5.8...6.1
Del. quantity cm³/ : 1.6...2.2
100 s: (1.3...2.5)
Spread cm³ : 0.6
100 s: (1.0)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.20...1.40
2nd speed rpm : 425
travel mm : 2.40...2.60
3rd speed rpm : 550
travel mm : 3.30...3.70
4th speed rpm : 900
travel mm : 8.20...8.60
5th speed rpm : 975
travel mm : 9.70...10.30

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 930
Rack travel in mm : 16.50...18.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 880
Aneroid pressure h: 900
Del.quantity : 203.0...205.0
1000 : (200.0...208.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 61...69

Testing:

1st rack travel in: 12.80
Speed rpm : 920...930
2nd rack travel in: 4.00
Speed rpm : 990...1020
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Control lever
position degrees: 8...162

Testing:

Speed rpm : 100
Minimum rack trave: 7.90
Speed rpm : 350
Rack travel in mm : 5.80...6.10

CONSTANT REGULATION

Speed rpm : 300...500

TORQUE CONTROL

Dimension a mm : 0,60
Torque control curve - 1st version
1st speed rpm : 880
Rack travel in m: 13.80...13.90
2nd speed rpm : 750
Rack travel in m: 14.40...14.60
3rd speed rpm : 825
Rack travel in m: 14.00...14.20

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Rack travel in mm : -
Contr.-rod trav.mm: 11.20...11.50

Measurement

Speed 1/min : 600

1st pressure hPa : 350

Rack travel in m: 12.20...12.40
2nd pressure hPa : 550
Rack travel in m: 13.80...14.00

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm3/ : 212.0...216.0
1000 s: (209.0...219.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 143.0...145.0
1000 s: (140.0...148.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.80
Speed rpm : 920...930

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 180.0...200.0
1000 s: (176.0...204.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SCA 14,0 H1
 Edition : 15.01.88
 Replaces : 2.11.87
 Test oil : ISO-4113
 Combination no. : 0 402 648 836
 Injection pump
 Pump designation : PE8P120A920/4LS7125T
 EP type number : 0 412 628 824
 Governor
 Governor design. : RQV200...950PA736-4
 Governor no. : 0 421 813 646

Customer-spec. information
 Customer : SAAB-SCANIA

Engine : DSC14 03 L09,L10

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 2- 7- 3- 4- 5-
 6- 8

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 13.80...13.90
 Del. quantity cm³/ : 22.1...22.3
 100 s: (21.8...22.6)
 Spread cm³ : 0.6
 100 s: (0.9)

2nd speed rpm : 225.0
 Rack travel in mm : 4.9...5.1
 Del. quantity cm³/ : 1.6...2.0
 100 s: (-)
 Spread cm³ : 0.3
 100 s: (0.6)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 225
 travel mm : 1.10...1.50
 2nd speed rpm : 350
 travel mm : 2.30...2.90
 3rd speed rpm : 650
 travel mm : 4.30...4.90
 4th speed rpm : 995
 travel mm : 7.50...7.70
 5th speed rpm : 1125
 travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1070
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h: 900
 Del. quantity : 221.0...223.0
 1000 : (218.0...226.0)

Spread cm3 : 6.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 57...65

Testing:
1st rack travel in: 12.80
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1115...1145
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 225
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 340...400

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 13.80...13.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.70...10.80
2nd pressure hPa : 445
Rack travel in m: 12.90...13.00
3rd pressure hPa : 325
Rack travel in m: 11.40...11.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 950
Del.quantity cm3/ : 211.0...219.0
1000 s: (209.0...221.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm3/ : 138.0...142.0
1000 s: (136.0...144.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.80
Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 240.0...290.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 225
Rack travel in mm : 4.90...5.10
Del.quantity cm3/ : 16.0...20.0
Spread cm3 : 3.00
1000 s: (6.00)

Remarks:

:
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without R0B0 diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on August 20, 1987.
Start of delivery - engine: 16⁰ before
TDC
Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SCA 14,0 H2
Edition : 29.01.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 402 648 839

Injection pump
Pump designation : PE8P120A920/4LS712ST
EP type number : 0 412 628 824
Governor
Governor design. : RGV200...950PA736-1
Governor no. : 0 421 813 551

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 03

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10
: (4.95...5.15)
Rack travel in mm : 9.00...12.00

Firing order : 1- 2- 7- 3- 4- 5-
6- 8

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.80...13.90

Del.quantity cm3/ : 22.1...22.3

100 s : (21.8...22.6)

Spread cm3 : 0.6

100 s : (0.9)

2nd speed rpm : 225.0
Rack travel in mm : 5.3...5.5
Del.quantity cm3/ : 1.6...2.0
100 s : (-)
Spread cm3 : 0.3
100 s : (0.6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 225
travel mm : 1.10...1.50
2nd speed rpm : 350
travel mm : 2.30...2.90
3rd speed rpm : 650
travel mm : 4.30...4.90
4th speed rpm : 995
travel mm : 7.50...7.70
5th speed rpm : 1125
travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1070
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Aneroid pressure h: 900
Del.quantity : 221.0...223.0
1000 : (218.0...226.0)

Spread cm³ : 6.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 57...65

Testing:
1st rack travel in: 12.80
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1115...1145
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 225
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 340...400

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 13.80...13.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.20...11.30
2nd pressure hPa : 365
Rack travel in m: 12.80...12.90
3rd pressure hPa : 215
Rack travel in m: 11.90...12.10

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 950
Del.quantity cm³/ : 211.0...219.0
1000 s: (209.0...221.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 158.0...162.0
1000 s: (156.0...164.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.80
Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 240.0...290.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 225
Rack travel in mm : 4.90...5.10

Remarks:

:
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without R0B0 diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on 1987-12-15

Start of delivery - engine: 16° before
TDC
Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 A 9
Edition : 11.12.87
Replaces : 20.11.87
Test oil : ISO-4113

Combination no. : 0 402 648 842

Injection pump
Pump designation : PE8P120A32OLS7801-1
EP type number : 0 412 628 818
Governor
Governor design. : RQV350..950PA866-2
Governor no. : 0 421 813 673

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 A

1st version kW : 275.0
Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Rack travel in mm : 20.00...21.00
Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 930

Rack travel in mm : 15.30...15.40

Del. quantity cm³/ : 21.1...21.3

100 s: (20.8...21.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0
Rack travel in mm : 6.2...6.6
Del. quantity cm³/ : 1.6...2.2
100 s: (1.3...2.5)
Spread cm³ : 0.6
100 s: (1.0)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 0.60...0.80
2nd speed rpm : 425
travel mm : 2.40...2.60
3rd speed rpm : 800
travel mm : 5.30...5.60
4th speed rpm : 1000
travel mm : 7.80...8.20
5th speed rpm : 1120
travel mm : 9.50...10.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : ?
Rack travel in mm : 16.50...18.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 930
Aneroid pressure h: 950
Del. quantity : 211.0...213.0
1000 : (208.0...216.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 60...68

Testing:

1st rack travel in: 14.40
Speed rpm : 980...990
2nd rack travel in: 4.00
Speed rpm : 1080...1110
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack travel: 7.90
Speed rpm : 350
Rack travel in mm : 6.20...6.40

CONSTANT REGULATION

Speed rpm : 300...500

TORQUE CONTROL

Dimension a mm : 0.90
Torque control curve - 1st version
1st speed rpm : 950
Rack travel in m: 15.30...15.40
2nd speed rpm : 800
Rack travel in m: 16.40...16.60
3rd speed rpm : 900
Rack travel in m: 15.90...16.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Rack travel in mm : -
Contr.-rod trav. mm: 10.90...11.30

Measurement

Speed 1/min : 600

1st pressure hPa : 450

C12

Rack travel in m: 11.70...11.90
2nd pressure hPa : 700
Rack travel in m: 13.80...14.00

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 950
Speed rpm : 800
Del. quantity cm³/ : 233.0...237.0
1000 s: (230.0...240.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 950
Speed rpm : 930
Del. quantity cm³/ : 167.0...169.0 *
1000 s: (164.0...172.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 143.0...145.0
1000 s: (140.0...148.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 14.40
Speed rpm : 980...990

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 190.0...210.0
1000 s: (186.0...214.0)

Remarks:

* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 21,6 B
Edition : 18.12.87
Replaces : 5.6.87
Test oil : ISO-4113

Combination no. : 0 402 670 803

Injection pump
Pump designation : PE12P120AS20/SRS7146
EP type number : 0 412 620 808
Governor
Governor design. : RSUV325...1150POA358
Governor no. : 0 421 829 105

Customer-spec. information
Customer : MWM

Engine : TBD234V12

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)

Rack travel in mm : 9.00...12.00

Firing order : 1- 2- 9- 10- 5- 6-
11- 12- 3- 4- 7- 8

Phasing : 0-30-60-90-120-150-
180-210-240-270-300-
330

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 14.90...15.00

Del. quantity cm³/ : 26.0...26.2

100 s : (25.8...26.6)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 325.0

Rack travel in mm : 6.5...6.7

Del. quantity cm³/ : 3.0...4.0

100 s : (2.7...4.3)

Spread cm³ : 0.6

100 s : (1.0)

3rd speed rpm : 1100

Rack travel in mm : 7.00...7.10

Del. quantity cm³/ : 2.0...7.0 *

100 s : (-)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

RATED SPEED

1st version

Control lever

position degrees: 66...74

Testing:

1st rack travel in: 13.90

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1280...1310

4th rack travel in: 1440

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 29...37
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.1
Speed rpm : 325
Rack travel in mm : 6.50...6.70
Rack travel in mm : 2.00
Speed rpm : 440...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav.mm: 9.40...9.60

Measurement
Speed 1/min : 500
2nd pressure hPa : 725
Rack travel in m: 14.70...14.80

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 13.90
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...240.0
1000 s: (-)

LOW IDLE

Speed rpm : 325
Rack travel in mm : 6.50...6.70
Del.quantity cm3/ : 30.0...40.0
1000 s: (27.0...43.0)
Spread cm3 : 6.00
1000 s: (10.00)

Remarks:

:

* = Element disconnected at idle for
cylinders 2, 4, 6, 8, 10 and 12.
Hydraulic latching of starting
delivery.

Latching at 0.75 bar...0.85 bar.

C14

Unlatching at 0.35 bar...0.45 bar.

Full-load delivery not known. Set
according to engine test report.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 10,8 C
Edition : 18.12.87
Replaces : 5.6.87
Test oil : ISO-4113

Combination no. : 0 402 676 804

Injection pump
Pump designation : PE6P120A320RS7142
EP type number : 0 412 626 820
Governor
Governor design. : RSUV325...1150POA358
Governor no. : 0 421 829 105

Customer-spec. information
Customer : MWM

Engine : D-TBD 234 V6

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 5.20...5.30
: (2.15...5.35)
Rack travel in mm : 9.00...12.00

Firing order : 1- 6- 3- 2- 5- 4

Phasing : 0-90-120-210-240-330
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800
Rack travel in mm : 14.90...15.00
Del. quantity cm³/ : 26.0...26.2
100 s : (25.7...26.5)
Spread cm³ : 0.5
100 s : (0.9)

2nd speed rpm : 325.0
Rack travel in mm : 6.5...6.7
Del. quantity cm³/ : 3.0...4.0
100 s : (2.7...4.3)
Spread cm³ : 0.6
100 s : (1.0)
3rd speed rpm : 1100
Rack travel in mm : 6.90...7.10
Del. quantity cm³/ : 2.0...7.0 *
100 s : (-)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 4.00

RATED SPEED

1st version
Control lever
position degrees: 66...74

Testing:
1st rack travel in: 13.90
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1280...1310
4th rack travel in: 1440
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 29...37
Setting point w/out bumper spring

Speed rpm : 325
Rack travel in mm : 6.1
Speed rpm : 325
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 440...500

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav.mm: 9.40...9.60

Measurement

Speed 1/min : 500
2nd pressure hPa : 725
Rack travel in m: 14.70...14.80

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.90
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...240.0

LOW IDLE

Speed rpm : 325
Rack travel in mm : 6.50...6.70
Del.quantity cm3/ : 30.0...40.0
1000 s: (27.0...43.0)
Spread cm3 : 6.00
1000 s: (10.00)

Remarks:

:

* = Element disconnected at idle for
cylinders 2, 4 and 6.
Hydraulic latching of starting
delivery.

Latching at 0.75 bar...0.85 bar.

Unlatching at 0.35 bar...0.45 bar.

Full-load delivery not known. Set
according to engine test report.

APPLICATION
Ship

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 14,4 C
Edition : 18.12.87
Replaces : 5.6.87
Test oil : ISO-4113

Combination no. : 0 402 678 805

Injection pump
Pump designation : PE8P120A520/SRS7143
EP type number : 0 412 628 820
Governor
Governor design. : RSUV325...1150P0A358
Governor no. : 0 421 829 105

Customer-spec. information
Customer : MWM

Engine : TBD234V8

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)
Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 5- 4- 7- 2-
3- 6

Phasing : 0-30-90-120-180-210-
270-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800
Rack travel in mm : 14.90...15.00
Del. quantity cm3/ : 26.0...26.2
100 s: (25.7...26.5)
Spread cm3 : 0.5
100 s: (0.9)

2nd speed rpm : 325.0
Rack travel in mm : 6.5...6.7
Del. quantity cm3/ : 3.0...4.0
100 s: (2.7...4.3)
Spread cm3 : 0.6
100 s: (1.0)
3rd speed rpm : 1100
Rack travel in mm : 6.90...7.10
Del. quantity cm3/ : 2.0...7.0 *
100 s: (-)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 4.00

RATED SPEED

1st version
Control lever
position degrees: 66...74

Testing:
1st rack travel in: 13.90
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1280...1310
4th rack travel in: 1440
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 29...37

Setting point w/out bumper spring

Speed rpm : 325
Rack travel in mm : 6.2
Speed rpm : 325
Rack travel in mm : 6.50...6.70
Rack travel in mm : 2.00
Speed rpm : 440...500

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav.mm: 9.40...9.60

Measurement

Speed 1/min : 500
2nd pressure hPa : 725
Rack travel in m: 14.70...14.80

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.90
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...240.0
1000 s: (196.0...244.0)

LOW IDLE

Speed rpm : 325
Rack travel in mm : 6.50...6.70
Del.quantity cm3/ : 30.0...40.0
1000 s: (27.0...43.0)
Spread cm3 : 6.00
1000 s: (10.00)

Remarks:

:

* = Element disconnected at idle for
cylinders 2, 4, 6 and 8
Hydraulic latching of starting
delivery.

Latching at 0.75 bar...0.85 bar.

Unlatching at 0.35 bar...0.45 bar.

Full-load delivery not known. Set
according to engine test report.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 28,8 D1
Edition : 18.12.87
Replaces : 12.11.87
Test oil : ISO-4113

Combination no. : 0 402 678 806

Injection pump
Pump designation : PE8P120A520/SRS7145
EP type number : 0 412 628 822
Governor
Governor design. : RSUV325...1150POA358
-1
Governor no. : 0 421 829 106

Customer-spec. information
Customer : MWM

Engine : TBD234V16

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)

Rack travel in mm : 9.00...12.00
Firing order : 1- 2- 3- 4- 7- 8-
5- 6

Phasing : 0-30-90-120-225-255-
315-345
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800
Rack travel in mm : 14.90...15.01
Del. quantity cm3/ : 26.0...26.2
100 s: (25.7...26.5)
Spread cm3 : 0.5
100 s: (0.9)

2nd speed rpm : 325.0
Rack travel in mm : 6.5...6.7
Del. quantity cm3/ : 3.0...4.0
100 s: (2.7...4.3)
Spread cm3 : 0.6
100 s: (1.0)
3rd speed rpm : 1100
Rack travel in mm : 6.90...7.10
Del. quantity cm3/ : 2.0...7.0 *
100 s: (-)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 4.00

RATED SPEED

1st version
Control lever
position degrees: 66...74

Testing:
1st rack travel in: 13.90
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1280...1310
4th rack travel in: 1440
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever

position degrees: 29...37
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.1
Speed rpm : 325
Rack travel in mm : 6.50...6.70
Rack travel in mm : 2.00
Speed rpm : 440...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav.mm: 9.40...9.60

Measurement
Speed 1/min : 500
2nd pressure hPa : 725
Rack travel in m: 14.70...14.80

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.90
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

LOW IDLE

Speed rpm : 325
Rack travel in mm : 6.50...6.70
Del.quantity cm³/ : 30.0...40.0
1000 s: (27.0...43.0)
Spread cm³ : 6.00
1000 s: (10.00)

Remarks:

:

* = Element disconnected at idle for
cylinders 2, 4, 6 and 8
Hydraulic latching of starting
delivery.

Latching at 0.75 bar...0.85 bar.

Unlatching at 0.35 bar...0.45 bar.

Full-load delivery not known. Set
according to engine test report.

Pump runs in tandem

APPLICATION
Ship

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 12,0 B
Edition : 11.12.87
Replaces : 10.85
Test oil : ISO-4113

Combination no. : 0 402 746 805

Injection pump
Pump designation : PES6P120A720LS7114
EP type number : 0 412 726 802
Governor
Governor design. : RQ300/900PA775
Governor no. : 0 421 801 319

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM447 LA

1st version kW : 300.0
Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...110

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values ____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)
Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 12.40...12.60

Del. quantity cm³/ : 22.0...22.2

100 s: (21.7...22.5)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.0...5.2

Del. quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 650

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 750

Del. quantity : 220.0...222.0

1000 : (217.0...225.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 20.0

Testing:

1st rack travel in: 10.20
Speed rpm : 945...960
2nd rack travel in: 4.00
Speed rpm : 990...1020
4th rack travel in: 1150
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.1

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 300
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 370...410

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 11.20...11.40
2nd speed rpm : 750
Rack travel in m: 12.40...12.60
3rd speed rpm : 850
Rack travel in m: 11.80...11.90

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav.mm: 9.60...9.80

Measurement

Speed 1/min : 500

1st pressure hPa : 350
Rack travel in m: 10.10...10.30
2nd pressure hPa : 550
Rack travel in m: 11.50...11.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 750
Speed rpm : 900

Del.quantity cm3/ : 197.0...203.0
1000 s: (194.0...206.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 142.0...149.0
1000 s: (139.0...152.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.20
Speed rpm : 945...960

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 D 3
 Edition : 06.11.87
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 403 436 104
 Injection pump
 Pump designation : PES6MW100/120RS1143
 EP type number : 0 413 406 137
 Governor
 Governor design. : RQV300...1200MW82-1
 Governor no. : 0 420 083 153

Customer-spec. information
 Customer : CUMMINS/US

Engine : 6 CTA-83Q

1st version kW : 179.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0.6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.15...3.25
 : (3.10...3.30)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 12.00...12.10

Del.quantity cm3/ : 13.6...13.8

100 s : (13.4...14.0)

Spread cm3 : 0.3

100 s : (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 7.1...7.2

Del.quantity cm3/ : 1.2...1.6

100 s : (1.0...1.8)

Spread cm3 : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1250

travel mm : 7.60...7.80

2nd speed rpm : 1350

travel mm : 8.60...9.00

3rd speed rpm : 350

travel mm : 1.20...1.60

4th speed rpm : 800

travel mm : 4.90...5.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1325

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h: 700

Del.quantity : 136.0...138.0

1000 : (134.0...140.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 42...50

Testing:

1st rack travel in: 11.00
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1370...1400
4th rack travel in: 1455
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 11...19
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 7.1

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 7.10...7.20

CONSTANT REGULATION

Speed rpm : 350...500

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200
Rack travel in m: 12.00...12.10
2nd speed rpm : 750
Rack travel in m: 12.50...12.60
3rd speed rpm : 1000
Rack travel in m: 12.00...12.10
4th speed rpm : 900
Rack travel in m: 12.10...12.30

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav.mm: 11.00...11.10

Measurement

Speed 1/min : 500

1st pressure hPa : 390
Rack travel in m: 11.40...11.50
2nd pressure hPa : 480

Rack travel in m: 11.90...12.20
3rd pressure hPa : 700
Rack travel in m: 12.50...12.60

START CUT-OUT

Speed 1/min : 270 (280)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750
Del.quantity cm³/ : 136.0...138.0
1000 s: (134.0...140.0)
Spread cm³ : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 108.0...110.0
1000 s: (106.0...112.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 205.0...225.0
1000 s: (202.0...228.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 7.10...7.20
Del.quantity cm³/ : 12.0...16.0
1000 s: (10.0...18.0)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 F
Edition : 19.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 403 436 105

Injection pump
Pump designation : PES6MW100/120RS1169
EP type number : 0 413 406 153
Governor
Governor design. : RQV350...1200MW78-1
Governor no. : 0 420 083 156

Customer-spec. information
Customer : CDC

Engine : 6CTA830

1st version kW : 197.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 11.90...12.00

Del. quantity cm³/ : 14.1...14.3

100 s : (13.9...14.5)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 5.6...5.8

Del. quantity cm³/ : 1.6...2.0

100 s : (1.4...2.2)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1330

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h : 600

Del. quantity : 141.0...143.0

1000 : (139.0...145.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 42...50

Testing:

1st rack travel in: 10.90

Speed rpm : 1240...1250

2nd rack travel in: 4.00

Speed rpm : 1385...1415

4th rack travel in: 1500

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 10...18
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.7

Testing:
Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 350
Rack travel in mm : 5.60...5.80

CONSTANT REGULATION
Speed rpm : 370...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 300
Contr.-rod trav.mm: 11.00...11.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.70...10.80
2nd pressure hPa : 375
Rack travel in m: 11.50...11.80
3rd pressure hPa : 600
Rack travel in m: 11.90...12.00

START CUT-OUT

Speed 1/min : 270 (280)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 600
Speed rpm : 750
Del.quantity cm3/ : 137.5...141.5
1000 s: (135.0...143.0)
Spread cm3 : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 113.5...115.5
1000 s: (111.5...117.5)
Spread cm3 : 3.50
1000 s: (6.00)

BREAKAWAY

1st version

C26

1mm rack travel less than

full load rack tr: 10.90
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 218.0...228.0
1000 s: (215.0...231.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.60...5.80
Del.quantity cm3/ : 16.0...20.0
1000 s: (14.0...22.0)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Start-of-delivery mark 10.5° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 4,5 B
 Edition : 19.02.88
 Replaces : 4.85
 Test oil : ISO-4113
 Combination no. : 0 403 444 101
 Injection pump
 Pump designation : PES4MW100/32ORS1102
 EP type number : 0 413 404 101
 Governor
 Governor design. : RQV300...1100MW39
 Governor no. : 0 420 083 045

Customer-spec. information
 Customer : VOLVO-BM

Engine : TD45

1st version kW : 85.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 173...176

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness : 6.00X2.00X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 12.00...12.10
 Del.quantity cm3/ : 10.0...10.2
 100 s: (9.8...10.4)
 Spread cm3 : 0.3
 100 s: (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.5
 Del.quantity cm3/ : 0.9...1.3
 100 s: (0.7...1.6)
 Spread cm3 : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1220
 travel mm : 9.20...9.60
 2nd speed rpm : 1150
 travel mm : 8.40...8.60
 3rd speed rpm : 420
 travel mm : 1.70...2.30
 4th speed rpm : 300
 travel mm : 1.00...1.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1100
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del.quantity : 100.0...102.0
 1000 : (98.0...104.0)
 Spread cm3 : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 42...50

Setting point:
Speed rpm : 1100
Rack travel in mm : 16.5

Testing:
1st rack travel in: 11.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 7...15
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.4

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.50
Rack travel in mm : 2.00
Speed rpm : 380...440

START CUT-OUT

Speed 1/min : 220 (250)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 1000
Del.quantity cm3/ : 101.0...105.0
1000 s: (99.0...107.0)
Spread cm3 : 5.50
1000 s: (7.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...0.0
1000 s: (137.0...0.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.50
Del.quantity cm3/ : 9.5...13.5
1000 s: (7.0...16.0)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 4,5 B 2
Edition : 19.02.88
Replaces : 12.83
Test oil : ISO-4113

Combination no. : 0 403 444 102

Injection pump
Pump designation : PES4MW100/32ORS1102
EP type number : 0 413 404 101
Governor
Governor design. : RGV300...1150MW39
Governor no. : 0 420 083 046

Customer-spec. information
Customer : VOLVO-BM

Engine : D45

1st version kW : 60.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 173...176

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00

D01

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.00...11.10

Del. quantity cm³/ : 8.2...8.4

100 s : (8.0...8.6)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.5...6.6

Del. quantity cm³/ : 1.3...1.7

100 s : (1.0...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1220

travel mm : 9.20...9.60

2nd speed rpm : 1150

travel mm : 8.40...8.60

3rd speed rpm : 420

travel mm : 1.70...2.30

4th speed rpm : 300

travel mm : 1.00...1.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 82.0...84.0

1000 : (80.0...86.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 46...54

Testing:

1st rack travel in: 10.00
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 7...15
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.6

Testing:

Speed rpm : 100
Minimum rack travel: 7.20
Speed rpm : 300
Rack travel in mm : 5.60...5.70

CONSTANT REGULATION

Speed rpm : 320...520

START CUT-OUT

Speed 1/min : 220 (250)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1000
Del. quantity cm3/ : 84.0...88.0
1000 s: (82.0...90.0)
Spread cm3 : 5.50
1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 0.0...140.0
1000 s: (0.0...143.0)

LOW IDLE

Speed rpm : 300

D02

Rack travel in mm : 6.50...6.60
Del. quantity cm3/ : 13.0...17.0
1000 s: (10.5...19.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 4,5 A
Edition : 19.02.88
Replaces : 03.83
Test oil : ISO-4113

Combination no. : 0 403 444 103

Injection pump
Pump designation : PES4MW100/320RS1102
EP type number : 0 413 404 101
Governor
Governor design. : RQV300...1150MW39-1
Governor no. : 0 420 083 047

Customer-spec. information
Customer : VOLVO-BM

Engine : TD45

1st version kW : 70.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 173...176

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00

D03

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.00...11.10

Del. quantity cm3/ : 8.5...8.7

100 s: (8.3...8.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.5

Del. quantity cm3/ : 1.3...1.7

100 s: (1.0...1.9)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1220

travel mm : 9.20...9.60

2nd speed rpm : 1150

travel mm : 8.40...8.60

3rd speed rpm : 420

travel mm : 1.70...2.30

4th speed rpm : 300

travel mm : 1.00...1.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 85.0...87.0

1000 : (83.0...89.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 42...50

Testing:

1st rack travel in: 10.00
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 7...15
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.6

Testing:

Speed rpm : 100
Minimum rack travel: 7.30
Speed rpm : 300
Rack travel in mm : 5.60...5.70

CONSTANT REGULATION

Speed rpm : 320...520

START CUT-OUT

Speed 1/min : 220 (250)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1000
Del. quantity cm³/ : 88.0...92.0
1000 s: (86.0...94.0)
Spread cm³ : 5.50
1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 0.0...140.0
1000 s: (0.0...143.0)

LOW IDLE

Speed rpm : 300

004

Rack travel in mm : 6.40...6.50
Del. quantity cm³/ : 13.0...17.0
1000 s: (10.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 4,5 D
Edition : 19.02.88
Replaces : 12.85
Test oil : ISO-4113

Combination no. : 0 403 444 104

Injection pump
Pump designation : PES4MW100/320RS1102
EP type number : 0 413 404 101
Governor
Governor design. : RQV300...1200MW39-2
Governor no. : 0 420 083 059

Customer-spec. information
Customer : VOLVO-BM

Engine : TD45

1st version kW : 82.5
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 173...176

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00

DOS

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.20...12.30

Del. quantity cm³/ : 10.0...10.2

100 s: (9.8...10.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.5...6.6

Del. quantity cm³/ : 1.3...1.7

100 s: (0.7...1.6)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1300

travel mm : 9.50...10.00

2nd speed rpm : 1250

travel mm : 8.80...9.00

3rd speed rpm : 380

travel mm : 1.50...2.10

4th speed rpm : 300

travel mm : 1.00...1.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1200

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 100.0...102.0

1000 : (98.0...104.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 44...52

Testing:

1st rack travel in: 11.20
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1290...1320
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:

Speed rpm : 100
Minimum rack travel: 8.10
Speed rpm : 300
Rack travel in mm : 6.50...6.60
Rack travel in mm : 2.00
Speed rpm : 400...550

START CUT-OUT

Speed 1/min : 220 (250)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1000
Del. quantity cm³/ : 101.0...105.0
1000 s: (99.0...107.0)
Spread cm³ : 5.50
1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.20
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 130.0...140.0
1000 s: (127.0...143.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.50...6.60

D06

Del. quantity cm³/ : 13.0...17.0
1000 s: (7.0...16.0)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 4,5 F
 Edition : 19.02.88
 Replaces : 04.85
 Test oil : ISO-4113

Combination no. : 0 403 444 106

Injection pump
 Pump designation : PES4MW100/32ORS1102
 EP type number : 0 413 404 101
 Governor
 Governor design. : RQV300...1100MW39-4
 Governor no. : 0 420 083 067

Customer-spec. information
 Customer : VOLVO-BM

Engine : D45

1st version kW : 82.5
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 173...176

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.70...11.80

Del.quantity cm³/ : 9.4...9.6

100 s : (9.2...9.8)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.5

Del.quantity cm³/ : 1.3...1.7

100 s : (1.0...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1220

travel mm : 9.20...9.60

2nd speed rpm : 1150

travel mm : 8.40...8.60

3rd speed rpm : 420

travel mm : 1.70...2.30

4th speed rpm : 300

travel mm : 1.00...1.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 94.0...96.0

1000 : (92.0...98.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 44...52

Testing:

1st rack travel in: 10.70
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.4

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.50

CONSTANT REGULATION

Speed rpm : 320...650

START CUT-OUT

Speed 1/min : 220 (250)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1000
Del.quantity cm³/ : 96.5...99.5
1000 s: (95.0...101.0)
Spread cm³ : 5.50
1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...140.0
1000 s: (127.0...143.0)

LOW IDLE

Speed rpm : 300

D08

Rack travel in mm : 6.40...6.50
Del.quantity cm³/ : 13.0...17.0
1000 s: (10.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 4,5 E
Edition : 19.02.88
Replaces : 12.85
Test oil : ISO-4113

Combination no. : 0 403 444 107

Injection pump
Pump designation : PES4MW100/320RS1102
EP type number : 0 413 404 101
Governor
Governor design. : RQV300...1100MW39-5
Governor no. : 0 420 083 068

Customer-spec. information
Customer : VOLVO-BM

Engine : D45

1st version kW : 85.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 173...176

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00

D09

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.60...12.70

Del. quantity cm³/ : 10.9...11.1

100 s: (10.7...11.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.5

Del. quantity cm³/ : 1.3...1.7

100 s: (1.0...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1220

travel mm : 9.20...9.60

2nd speed rpm : 1150

travel mm : 8.40...8.60

3rd speed rpm : 420

travel mm : 1.70...2.30

4th speed rpm : 300

travel mm : 1.00...1.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 109.0...111.0

1000 : (107.0...113.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 44...52

Testing:

1st rack travel in: 11.60
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1210...1240
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 10...18
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.4

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.50

CONSTANT REGULATION

Speed rpm : 320...450

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1000
Del.quantity cm3/ : 110.0...114.0
1000 s: (108.0...116.0)
Spread cm3 : 5.50
1000 s: (7.0)

RACK STOP ADJUSTMENT

Speed rpm : 100

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.60
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...140.0
1000 s: (127.0...143.0)

LOW IDLE

Speed rpm : 300

D10

Rack travel in mm : 6.40...6.50
Del.quantity cm3/ : 13.0...17.0
1000 s: (10.5...19.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 4,5 K
Edition : 19.02.88
Replaces : 12.85
Test oil : ISO-4113

Combination no. : 0 403 444 108

Injection pump
Pump designation : PES4MW100/32ORS1116
EP type number : 0 413 404 102
Governor
Governor design. : RQV300...1100MW51
Governor no. : 0 420 083 072

Customer-spec. information
Customer : VOLVO-BM

Engine : TD45-EM

1st version kW : 85.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.20...3.30
: (3.15...3.35)

Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.50...12.60

Del. quantity cm³/ : 11.6...11.8

100 s: (11.4...12.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.8...5.9

Del. quantity cm³/ : 1.3...1.7

100 s: (1.0...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1220

travel mm : 9.20...9.60

2nd speed rpm : 1150

travel mm : 8.40...8.60

3rd speed rpm : 420

travel mm : 1.70...2.30

4th speed rpm : 300

travel mm : 1.00...1.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 750

Del. quantity : 116.0...118.0

1000 : (114.0...120.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 48...56

Testing:
1st rack travel in: 11.50
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.8

Testing:
Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 5.80...5.90

CONSTANT REGULATION
Speed rpm : 330...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 700
Rack travel in mm : 265
Contr.-rod trav.mm: 10.60...10.70

Measurement
Speed 1/min : 700

1st pressure hPa : 750
Rack travel in m: 12.50...12.60
2nd pressure hPa : -
Rack travel in m: 10.50...10.60
3rd pressure hPa : 520
Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 220 (250)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 750
Speed rpm : 1000
Del.quantity cm3/ : 117.0...121.0
1000 s: (114.5...123.5)

Spread cm3 : 5.50
Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 79.0...81.0
1000 s: (76.5...83.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...160.0
1000 s: (147.0...163.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.80...5.90
Del.quantity cm3/ : 13.0...17.0
1000 s: (10.5...19.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 8,8 K 2
 Edition : 12.02.88
 Replaces : 04.86
 Test oil : ISO-4113

Combination no. : 0 403 446 122

Injection pump
 Pump designation : PES6MW100/320RS1016
 EP type number : 0 413 406 010
 Governor
 Governor design. : RQV300...1400MW25-1
 Governor no. : 0 420 083 039

Customer-spec. information
 Customer : RVI

Engine : MIDR06.02-12

1st version kW : 125.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 173...176

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.00...3.10
 : (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400

Del. quantity cm³/ : 9.1...9.3

100 s : (8.9...9.5)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 4.8...4.9

Del. quantity cm³/ : 0.9...1.3

100 s : (0.7...1.6)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1475

travel mm : 8.40...9.20

2nd speed rpm : 1350

travel mm : 7.60...7.80

3rd speed rpm : 500

travel mm : 2.70...3.10

4th speed rpm : 300

travel mm : 1.40...2.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1400

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1400

Aneroid pressure h: 500

Del. quantity : 91.5...93.5

1000 : (89.5...95.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 58...66

Testing:

1st rack travel in: 10.10
Speed rpm : 1455...1465
2nd rack travel in: 4.00
Speed rpm : 1575...1605
4th rack travel in: 1700
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.2
Speed rpm : 300
Rack travel in mm : 5.90...5.80
Rack travel in mm : 2.00
Speed rpm : 490...550
Speed rpm : 200
Maximum rack travel: 7.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 500

Measurement

Speed 1/min : 500
Rack travel in m: 9.80...9.70
2nd pressure hPa : 200
Rack travel in m: 10.30...10.20
3rd pressure hPa : 230
Rack travel in m: 10.90...10.70

START CUT-OUT

Speed 1/min : 230 (250)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 500
Speed rpm : 900
Del. quantity cm³/ : 87.5...91.5
1000 s: (85.5...93.5)
Spread cm³ : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 56.0...58.0
1000 s: (53.5...60.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1455...1465

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 94.0...104.0
1000 s: (91.0...107.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.30...6.20
Del. quantity cm³/ : 9.5...13.5
1000 s: (7.0...16.0)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:
Start-of-delivery mark is 8° after
start of delivery with control-rod
travel = 10.5 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 8,8 K
 Edition : 12.02.88
 Replaces : 12.85
 Test oil : ISO-4113

Combination no. : 0 403 446 123

Injection pump
 Pump designation : PES6MW100/32ORS1016
 EP type number : 0 413 406 010
 Governor
 Governor design. : RQV300...1300MW25
 Governor no. : 0 420 083 030

Customer-spec. information
 Customer : RVI

Engine : MIDR06.02-12

1st version kW : 125.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 173...176

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Del.quantity cm³/ : 8.9...9.1

100 s: (8.7...9.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.3...5.4

Del.quantity cm³/ : 0.9...1.3

100 s: (0.7...1.6)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1475

travel mm : 8.40...9.20

2nd speed rpm : 1350

travel mm : 7.60...7.80

3rd speed rpm : 500

travel mm : 2.70...3.10

4th speed rpm : 300

travel mm : 1.40...2.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1300

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300

Aneroid pressure h: 665

Del.quantity : 89.5...91.5

1000 : (87.5...93.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 58...66

Testing:

1st rack travel in: 10.10
Speed rpm : 1370...1380
2nd rack travel in: 3.90
Speed rpm : 1495...1525
4th rack travel in: 1650
Speed rpm : 1.00...0.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.2

Testing:

Speed rpm : 100
Speed rpm : 300
Rack travel in mm : 5.90...5.80
Speed rpm : 200
Maximum rack travel: 3.60

CONSTANT REGULATION

Speed rpm : 340...600

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 665

Measurement

Speed 1/min : 500
Rack travel in m: 9.90...9.80
2nd pressure hPa : 200
Rack travel in m: 10.30...10.20
3rd pressure hPa : 230
Rack travel in m: 10.90...10.70

START CUT-OUT

Speed 1/min : 230 (250)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 665
Speed rpm : 900
Del. quantity cm³/ : 85.0...89.0
1000 s: (83.0...91.0)
Spread cm³ : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500

Del. quantity cm³/ : 56.0...58.0
1000 s: (54.0...60.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1370...1380

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 95.0...105.0
1000 s: (90.0...110.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.80...5.70
Del. quantity cm³/ : 9.5...13.5
1000 s: (7.0...16.0)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Start-of-delivery mark 10.5° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 6,1 H
 Edition : 19.02.88
 Replaces : 4.86
 Test oil : ISO-4113
 Combination no. : 0 403 446 152
 Injection pump
 Pump designation : PES6MW100/320RS1119
 EP type number : 0 413 406 113
 Governor
 Governor design. : RQV300...1400MW57
 Governor no. : 0 420 083 078

Customer-spec. information
 Customer : VOLVO

Engine : TD 61-3012

1st version kW : 132.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.10...3.20
 : (3.05...3.25)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.40...11.50

Del. quantity cm³/ : 9.0...9.2

100 s: (8.8...9.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.9...7.0

Del. quantity cm³/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1580
 travel mm : 9.50...9.90

2nd speed rpm : 1450
 travel mm : 8.40...8.60

3rd speed rpm : 550
 travel mm : 3.40...4.00

4th speed rpm : 300
 travel mm : 1.20...1.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: 1

Speed rpm : 1480

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 700

Del. quantity : 90.0...92.0

1000 : (88.0...94.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:
1st rack travel in: 10.60
Speed rpm : 1440...1450
2nd rack travel in: 4.00
Speed rpm : 1595...1625
4th rack travel in: 1725
Speed rpm : 0.10...1.00

LOW IDLE 1
Control lever
position degrees: 12...20
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.9

Testing:
Speed rpm : 100
Minimum rack travel: 8.50
Speed rpm : 300
Rack travel in mm : 6.90...7.00

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 550
Rack travel in mm : 440
Contr.-rod trav.mm: 11.20...11.30

Measurement
Speed 1/min : 550

1st pressure hPa : -
Rack travel in m: 10.10...10.20
2nd pressure hPa : 300
Rack travel in m: 10.30...10.60
3rd pressure hPa : 700
Rack travel in m: 11.40...11.50

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 1000
Del.quantity cm3/ : 75.0...77.0
1000 s: (73.0...79.0)

RACK STOP ADJUSTMENT

Speed rpm : 100

BREAKAWAY

D18

1st version
1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1440...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (137.0...163.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.90...7.00
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50
1000 s: (5.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 6,1 G
 Edition : 19.02.88
 Replaces : 05.11.86
 Test oil : ISO-4113
 Combination no. : 0 403 446 153
 Injection pump
 Pump designation : PES6MW100/320RS1119-
 1
 EP type number : 0 413 406 114
 Governor
 Governor design. : RQV300..1400MW57-1
 Governor no. : 0 420 083 079

Customer-spec. information
 Customer : VOLVO

Engine : TD 61..3012

1st version kW : 150.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.10...3.20
 : (3.05...3.25)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 10.4...10.6

100 s: (10.3...10.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.3...6.4

Del. quantity cm³/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1580

travel mm : 9.50...9.90

2nd speed rpm : 1450

travel mm : 8.40...8.60

3rd speed rpm : 550

travel mm : 3.40...4.00

4th speed rpm : 300

travel mm : 1.20...1.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: 100

Speed rpm : 1480

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 700

Del. quantity : 104.0...106.0

1000 : (103.0...109.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 57...65

Testing:
1st rack travel in: 11.00
Speed rpm : 1440...1450
2nd rack travel in: 4.00
Speed rpm : 1590...1620
4th rack travel in: 1700
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 9...17
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.3

Testing:
Speed rpm : 100
Minimum rack travel: 7.90
Speed rpm : 300
Rack travel in mm : 6.30...6.40

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 550
Rack travel in mm : 450
Contr.-rod trav.mm: 11.80...11.90

Measurement
Speed 1/min : 550

1st pressure hPa : -
Rack travel in m: 10.10...10.20
2nd pressure hPa : 200
Rack travel in m: 10.30...10.60
3rd pressure hPa : 700
Rack travel in m: 12.00...12.10

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 1000
Del.quantity cm3/ : 75.0...77.0
1000 s: (73.0...79.0)

RACK STOP ADJUSTMENT

Speed rpm : 100

D20

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1440...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (137.0...163.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.30...6.40
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 D 9
Edition : 12.02.88
Replaces : 03.04.87
Test oil : ISO-4113

Combination no. : 0 403 446 158

Injection pump
Pump designation : PES6MW100/720RS1131
EP type number : 0 413 406 123
Governor
Governor design. : RGV300...13COMW50-1
Governor no. : 0 420 083 089

Customer-spec. information
Customer : DB

Engine : OM 366 LA

1st version kW : 150.0
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 12.10...12.20

Del. quantity cm³/ : 10.05...10.25

100 s: (9.85...10.45)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.1...6.2

Del. quantity cm³/ : 0.9...1.3

100 s: (0.65...1.55)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1450

travel mm : 9.40...10.20

2nd speed rpm : 1350

travel mm : 8.50...8.70

3rd speed rpm : 450

travel mm : 2.60...2.80

4th speed rpm : 300

travel mm : 1.20...1.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1340

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300

Aneroid pressure h: 700

Del. quantity : 100.50...102.50

1000 : (98.5...104.50)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 48...56

Setting point:
Speed rpm : 1340
Rack travel in mm : 16.5

Testing:
1st rack travel in: 11.10
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1440...1470
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.1

Testing:
Speed rpm : 100
Minimum rack trave: 7.60
Speed rpm : 300
Rack travel in mm : 6.10...6.20

CONSTANT REGULATION
Speed rpm : 350...550

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 170
Contr.-rod trav.mm: 10.80...10.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.50...10.60
2nd pressure hPa : 225
Rack travel in m: 11.70...12.00
3rd pressure hPa : 700
Rack travel in m: 12.10...12.20

START CUT-OUT

Speed 1/min : 220 (250)

FUEL DELIVERY CHARACTERISTICS

1st version

D22

Aneroid pressure h: 700
Speed rpm : 600
Del.quantity cm3/ : 85.0...89.0
1000 s: (83.0...91.0)
Spread cm3 : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 54.0...56.0
1000 s: (52.0...58.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.10
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 71.0...81.0
1000 s: (68.0...84.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.10...6.20
Del.quantity cm3/ : 9.00...13.0
1000 s: (6.5...15.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R 1
Edition : 19.02.88
Replaces : 11.85
Test oil : ISO-4113

Combination no. : 0 403 446 160

Injection pump
Pump designation : PES6MW100/32ORS1112
EP type number : 0 413 406 108
Governor
Governor design. : RQV350...1200MW64
Governor no. : 0 420 083 090

Customer-spec. information
Customer : NAVI-STAR

Engine : DTA-466C

1st version kW : 157.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.80...11.90

Del. quantity cm³/ : 10.8...11.0

100 s: (10.6...11.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 5.9...6.0

Del. quantity cm³/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350

travel mm : 8.80...9.20

2nd speed rpm : 1250

travel mm : 7.90...8.10

3rd speed rpm : 500

travel mm : 2.60...3.20

4th speed rpm : 350

travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 800

Del. quantity : 108.0...110.0

1000 : (106.0...112.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 43...48

Testing:

1st rack travel in: 10.50

Speed rpm : 1260...1280

2nd rack travel in: 4.00

Speed rpm : 1375...1385

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 7...15

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 5.9

Testing:

Speed rpm : 100

Minimum rack travel: 9.00

Speed rpm : 350

Rack travel in mm : 5.90...6.00

CONSTANT REGULATION

Speed rpm : 370...450

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 800

Rack travel in m: 11.80...11.90

2nd speed rpm : 1200

Rack travel in m: 11.50...11.60

3rd speed rpm : 1050

Rack travel in m: 11.60...11.80

4th speed rpm : 1150

Rack travel in m: 11.50...11.60

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Rack travel in mm : 130

Contr.-rod trav.mm: 11.00...11.10

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 10.70...10.80

2nd pressure hPa : 240

Rack travel in m: 11.40...11.70

3rd pressure hPa : 800

D24

Rack travel in m: 11.80...11.90

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 800

Speed rpm : 1200

Del.quantity cm3/ : 107.0...111.0

1000 s: (105.0...113.0)

Spread cm3 : 6.50

1000 s: (7.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 85.5...87.5

1000 s: (83.5...89.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.50

Speed rpm : 1260...1280

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...180.0

1000 s: (137.0...183.0)

Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350

Rack travel in mm : 5.90...6.00

Del.quantity cm3/ : 18.0...22.0

1000 s: (15.5...24.5)

Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500 \text{ 1/min}$

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7.6 R 7
 Edition : 19.02.88
 Replaces : 09.03.87
 Test oil : ISO-4113

Combination no. : 0 403 446 161

Injection pump
 Pump designation : PES6MW100/32ORS1134
 EP type number : 0 413 406 125
 Governor
 Governor design. : RQV350...1200MW46-1
 Governor no. : 0 420 083 091

Customer-spec. information
 Customer : NAVI-STAR

Engine : DTA-466C

1st version kW : 172.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
 assembly : 1 688 901 016

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 12.80...12.90

Del. quantity cm3/ : 12.1...12.3

100 s: (11.9...12.5)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.5...6.6

Del. quantity cm3/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350
 travel mm : 8.80...9.20

2nd speed rpm : 1250
 travel mm : 7.90...8.10

3rd speed rpm : 500
 travel mm : 2.60...3.20

4th speed rpm : 350
 travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 800

Del. quantity : 121.5...123.5

1000 : (119.5...125.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 45...50

Testing:

1st rack travel in: 11.80

Speed rpm : 1250...1260

2nd rack travel in: 4.00

Speed rpm : 1395...1405

4th rack travel in: 1460

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 9...17

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 6.5

Testing:

Speed rpm : 100

Minimum rack travel: 9.00

Speed rpm : 350

Rack travel in mm : 6.50...6.60

CONSTANT REGULATION

Speed rpm : 370...500

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Rack travel in mm : 240

Contr.-rod trav.mm: 10.40...10.50

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 9.80...9.90

2nd pressure hPa : 520

Rack travel in m: 11.90...12.20

3rd pressure hPa : 800

Rack travel in m: 12.80...12.90

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 800

D27

Speed rpm : 1200

Del.quantity cm3/ : 124.5...128.5

1000 s: (122.5...130.5)

Spread cm3 : 6.50

1000 s: (7.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 65.5...67.5

1000 s: (63.5...69.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80

Speed rpm : 1250...1260

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...180.0

1000 s: (137.0...183.0)

Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350

Rack travel in mm : 6.50...6.60

Del.quantity cm3/ : 18.0...22.0

1000 s: (15.5...24.5)

Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than n = 500 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 8,8 K 5
Edition : 12.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 403 446 165

Injection pump
Pump designation : PES6MW100/32ORS1016
EP type number : 0 413 406 010
Governor
Governor design. : RQV300...1300MW25-S
Governor no. : 0 420 083 095

Customer-spec. information
Customer : RVI

Engine : MIDRO6.02-12 F

1st version kW : 125.0
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 173...176

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 3.00...3.10
: (2.95...3.15)
Rack travel in mm : 9.00...12.00

E01

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Del. quantity cm³/ : 8.9...9.1
100 s : (8.7...9.3)

Spread cm³ : 0.3
100 s : (0.6)

2nd speed rpm : 300.0
Rack travel in mm : 5.3...5.4
Del. quantity cm³/ : 0.9...1.3
100 s : (0.7...1.6)
Spread cm³ : 0.3
100 s : (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1475
travel mm : 8.40...9.20
2nd speed rpm : 1350
travel mm : 7.60...7.80
3rd speed rpm : 500
travel mm : 2.70...3.10
4th speed rpm : 300
travel mm : 1.40...2.20

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1300
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1300
Aneroid pressure h : 665
Del. quantity : 89.5...91.5
1000 : (87.5...93.5)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 60...68

Testing:

1st rack travel in: 10.10
Speed rpm : 1370...1380
2nd rack travel in: 3.90
Speed rpm : 1495...1525
4th rack travel in: 1650
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...17
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.9
Speed rpm : 300
Rack travel in mm : 5.90...5.80
Speed rpm : 200
Maximum rack travel: 3.60

CONSTANT REGULATION

Speed rpm : 340...600

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 665

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in mm: 9.90...9.80
2nd pressure hPa : 200
Rack travel in mm: 10.30...10.20
3rd pressure hPa : 230
Rack travel in mm: 10.90...10.70

START CUT-OUT

Speed 1/min : 230 (250)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 665
Speed rpm : 900
Del. quantity cm³/ : 86.5...90.5
1000 s: (84.5...92.5)
Spread cm³ : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500

Del. quantity cm³/ : 56.0...58.0
1000 s: (54.0...60.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1370...1380

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 95.0...105.0
1000 s: (92.0...108.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.80...5.70
Del. quantity cm³/ : 9.5...13.5
1000 s: (7.0...16.0)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:
Start-of-delivery mark is at 8° after
start of delivery.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R11
 Edition : 19.02.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 403 446 174

Injection pump
 Pump designation : PES6MW100/32ORS1140
 EP type number : 0 413 406 135
 Governor
 Governor design. : RQV350...1200MW46-7
 Governor no. : 0 420 083 107

Customer-spec. information
 Customer : NAVI-STAR

Engine : DT-466 C

1st version kW : 134.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
 assembly : 1 688 901 016

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.40...11.50

Del. quantity cm³/ : 9.1...9.3

100 s : (8.9...9.5)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.6...6.7

Del. quantity cm³/ : 1.6...2.0

100 s : (1.3...2.2)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1250

travel mm : 7.80...8.00

2nd speed rpm : 1340

travel mm : 8.80...9.20

3rd speed rpm : 500

travel mm : 2.60...3.20

4th speed rpm : 350

travel mm : 1.30...1.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.60...9.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 700

Del. quantity : 91.5...93.5

1000 : (89.5...95.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 45...50

Testing:

1st rack travel in: 10.40
Speed rpm : 1240...1260
2nd rack travel in: 4.00
Speed rpm : 1360...1370
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 10...18
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.6

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.60...6.70

CONSTANT REGULATION

Speed rpm : 370...500

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 170
Contr.-rod trav.mm: 10.10...10.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.10...10.20
2nd pressure hPa : 310
Rack travel in m: 10.30...10.40
3rd pressure hPa : 700
Rack travel in m: 10.70...11.00

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700

E04

Speed rpm : 1200
Del.quantity cm3/ : 94.0...98.0
1000 s: (92.0...100.0)
Spread cm3 : 6.50
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 66.0...68.0
1000 s: (64.0...70.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1240...1260

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.60...6.70
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than n = 500 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7.6 R12
Edition : 19.02.88
Replaces : 17.12.86
Test oil : ISO-4113

Combination no. : 0 403 446 176

Injection pump
Pump designation : PES6MW100/32ORS1140
EP type number : 0 413 406 135
Governor
Governor design. : RQV350...1200MW72
Governor no. : 0 420 083 109

Customer-spec. information
Customer : NAVI-STAR

Engine : DT-466 C

1st version kW : 123.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.00...11.10

Del. quantity cm³/ : 8.6...8.8

100 s : (8.4...9.0)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.4...6.5

Del. quantity cm³/ : 1.6...2.0

100 s : (1.3...2.2)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1250

travel mm : 7.80...8.00

2nd speed rpm : 1340

travel mm : 8.80...9.20

3rd speed rpm : 500

travel mm : 2.60...3.20

4th speed rpm : 350

travel mm : 1.30...1.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.60...9.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del. quantity : 86.0...88.0

1000 : (84.0...90.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 46...51

Testing:

1st rack travel in: 10.00

Speed rpm : 1240...1260

2nd rack travel in: 4.00

Speed rpm : 1350...1360

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 10...18

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 6.4

Testing:

Speed rpm : 100

Minimum rack travel: 9.00

Speed rpm : 350

Rack travel in mm : 6.40...6.50

CONSTANT REGULATION

Speed rpm : 370...450

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1200

Del. quantity cm³/ : 89.0...93.0

1000 s: (87.0...95.0)

Spread cm³ : 6.50

1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00

Speed rpm : 1240...1260

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 140.0...180.0

1000 s: (137.0...183.0)

Rack travel in mm : 19.00...21.00

E07

LOW IDLE

Speed rpm : 350

Rack travel in mm : 6.40...6.50

Del. quantity cm³/ : 16.0...20.0

1000 s: (13.5...22.5)

Spread cm³ : 3.50

1000 s: (5.50)

Remarks:

:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R13
 Edition : 19.02.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 403 446 181

Injection pump
 Pump designation : PES6MW100/32ORS1134
 EP type number : 0 413 406 125
 Governor
 Governor design. : RQV350...1200MW46-9
 Governor no. : 0 420 083 116

Customer-spec. information
 Customer : NAVI-STAR

Engine : DT-466 C

1st version kW : 122.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
 assembly : 1 688 901 016

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

 Rack travel in mm : 11.00...11.10

 Del. quantity cm³/ : 8.2...8.4

 100 s: (8.0...8.6)

 Spread cm³ : 0.3

 100 s: (0.6)

 2nd speed rpm : 350.0
 Rack travel in mm : 6.6...6.7
 Del. quantity cm³/ : 1.6...2.0
 100 s: (1.3...2.2)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1250
 travel mm : 7.80...8.00
 2nd speed rpm : 1340
 travel mm : 8.80...9.20
 3rd speed rpm : 700
 travel mm : 4.20...4.80
 4th speed rpm : 350
 travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1355
 Rack travel in mm : 8.00...0.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 850
 Aneroid pressure h: 700
 Del. quantity : 82.0...84.0
 1000 : (80.0...86.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 46...51

Testing:

1st rack travel in: 10.00
Speed rpm : 1265...1285
2nd rack travel in: 4.00
Speed rpm : 1365...1375
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 12...20
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.6

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.60...6.70

CONSTANT REGULATION

Speed rpm : 360...540

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 210
Contr.-rod trav.mm: 10.30...10.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.00...10.10
2nd pressure hPa : 300
Rack travel in m: 10.60...10.90
3rd pressure hPa : 700
Rack travel in m: 11.00...11.10

START CUT-OUT

Speed 1/min : 220 (210)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700

E09

Speed rpm : 1200
Del.quantity cm³/ : 86.0...90.0
1000 s: (84.0...92.1)
Spread cm³ : 6.50
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 58.5...60.5
1000 s: (56.5...62.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1265...1285

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.60...6.70
Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than n = 500 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R14
Edition : 19.02.88
Replaces : 31.07.87
Test oil : ISO-4113

Combination no. : 0 403 446 183

Injection pump
Pump designation : PES6MW100/32ORS1112
EP type number : 0 413 406 108
Governor
Governor design. : RQV350...1300MW46-11
Governor no. : 0 420 083 120

Customer-spec. information
Customer : NAVISTAR

Engine : DT-466 C

1st version kW : 154.5
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 11.00...11.10

Del. quantity cm3/ : 10.6...10.8

100 s: (10.4...11.0)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 5.7...5.8

Del. quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350

travel mm : 8.30...8.50

2nd speed rpm : 1460

travel mm : 9.10...9.50

3rd speed rpm : 550

travel mm : 3.10...3.70

4th speed rpm : 350

travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.60...9.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Aneroid pressure h: 700

Del. quantity : 106.5...108.5

1000 : (104.5...110.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 45...50

Testing:

1st rack travel in: 10.00
Speed rpm : 1345...1365
2nd rack travel in: 4.00
Speed rpm : 1455...1465
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 10...18
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.7

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 5.70...5.80

CONSTANT REGULATION

Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 170
Contr.-rod trav.mm: 10.20...10.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.90...10.00
2nd pressure hPa : 315
Rack travel in m: 10.60...10.90
3rd pressure hPa : 700
Rack travel in m: 11.00...11.10

START CUT-OUT

Speed 1/min : 220 (210)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700

Speed rpm : 1300
Del.quantity cm3/ : 108.0...112.0
1000 s: (106.0...114.0)
Spread cm3 : 6.50
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 81.5...83.5
1000 s: (79.5...85.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1345...1365

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.70...5.80
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than n = 500 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R15
Edition : 19.02.88
Replaces : 31.07.87
Test oil : ISO-4113

Combination no. : 0 403 446 185

Injection pump
Pump designation : PES6MW100/32ORS1140
EP type number : 0 413 406 135
Governor
Governor design. : RQV350...1200MW72-1
Governor no. : 0 420 083 122

Customer-spec. information
Customer : NAVISTAR

Engine : DT-466 C

1st version kW : 134.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.40...11.50

Del.quantity cm3/ : 9.1...9.3

100 s: (8.9...9.5)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.6...6.7

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1250
travel mm : 7.80...8.00

2nd speed rpm : 1340
travel mm : 8.80...9.20

3rd speed rpm : 500
travel mm : 2.60...3.20

4th speed rpm : 350
travel mm : 1.30...1.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del.quantity : 91.5...93.5

1000 : (89.5...95.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 42...47

Testing:

1st rack travel in: 10.40
Speed rpm : 1250...1270
2nd rack travel in: 4.00
Speed rpm : 1360...1370
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 10...18
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.6

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.60...6.70

CONSTANT REGULATION

Speed rpm : 370...500

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1200
Del. quantity cm³/ : 94.0...98.0
1000 s: (92.0...100.0)
Spread cm³ : 6.50
1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1250...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

E15

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.60...6.70
Del. quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 D 21
Edition : 19.02.88
Replaces : 10.08.87
Test oil : ISO-4113

Combination no. : 0 403 446 187

Injection pump
Pump designation : PES6MW100/72ORS1129
EP type number : 0 413 406 121
Governor
Governor design. : RQV300...1300MW50-2
Governor no. : 0 420 083 124

Customer-spec. information
Customer : DB

Engine : OM 366 LA

1st version kW : 150.0
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 11.20...11.30

Del. quantity cm³/ : 9.4...9.6

100 s : (9.2...9.8)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.5...5.6

Del. quantity cm³/ : 1.0...1.2

100 s : (0.8...1.6)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1340

travel mm : 8.60...8.80

2nd speed rpm : 1430

travel mm : 9.30...9.70

3rd speed rpm : 300

travel mm : 1.20...1.60

4th speed rpm : 700

travel mm : 3.80...4.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1340

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300

Aneroid pressure h : 700

Del. quantity : 94.0...96.0

1000 : (92.0...98.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 10.20
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1430...1460
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.5

Testing:
Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 300
Rack travel in mm : 5.50...5.60

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

CONSTANT REGULATION
Speed rpm : 320...530

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 400
Contr.-rod trav.mm: 9.90...10.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.50...9.60
2nd pressure hPa : 500
Rack travel in m: 10.80...11.10
3rd pressure hPa : 700
Rack travel in m: 11.20...11.30

START CUT-OUT

Speed 1/min : 220 (230)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700

Speed rpm : 600
Del.quantity cm3/ : 89.0...92.0
1000 s: (87.0...94.0)
Spread cm3 : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 53.0...55.0
1000 s: (51.0...57.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.20
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 90.0...100.0
1000 s: (87.0...103.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.50...5.60
Del.quantity cm3/ : 10.0...12.0
1000 s: (8.0...16.0)
Spread cm3 : 3.50
1000 s: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 D 28
Edition : 19.02.88
Replaces : 10.04.87
Test oil : ISO-4113

Combination no. : 0 403 446 188

Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0 413 406 138
Governor
Governor design. : RQV300...1300MW48-4
Governor no. : 0 420 083 126

Customer-spec. information
Customer : DB

Engine : OM366A

1st version kW : 100.0
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Rack travel in mm : 19.00...21.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 10.10...10.20

Del. quantity cm³/ : 7.0...7.2

100 s : (6.8...7.4)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.3...7.4

Del. quantity cm³/ : 1.0...1.4

100 s : (0.9...1.5)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1340

travel mm : 8.50...8.70

2nd speed rpm : 1450

travel mm : 9.30...9.70

3rd speed rpm : 500

travel mm : 2.70...3.30

4th speed rpm : 300

travel mm : 1.20...1.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1350

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300

Del. quantity : 70.0...72.0

1000 : (68.0...74.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 50...58

Testing:

1st rack travel in: 9.10
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1390...1420
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.3

Testing:

Speed rpm : 100
Minimum rack travel: 9.30
Speed rpm : 300
Rack travel in mm : 7.30...7.40

CONSTANT REGULATION

Speed rpm : 330...500

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1300
Rack travel in m: 10.10...10.20
2nd speed rpm : 750
Rack travel in m: 11.10...11.20
3rd speed rpm : 600
Rack travel in m: 11.10...11.20
4th speed rpm : 900
Rack travel in m: 10.70...10.90

START CUT-OUT

Speed 1/min : 230 (250)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del. quantity cm³/ : 71.5...74.5
1000 s: (69.0...77.0)
Spread cm³ : 5.00
1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 80.0...90.0
1000 s: (77.0...93.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.30...7.40
Del. quantity cm³/ : 10.0...14.0
1000 s: (9.0...15.0)
Spread cm³ : 3.50
1000 s: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7.6 R22
Edition : 19.02.88
Replaces : 10.08.87
Test oil : ISO-4113

Combination no. : 0 403 446 192

Injection pump
Pump designation : PES6MW100/32ORS1112
EP type number : 0 413 406 108
Governor
Governor design. : RQV350...1300MW72-2
Governor no. : 0 420 083 141

Customer-spec. information
Customer : NAVISTAR

Engine : DT-466

1st version kW : 136.0
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 10.00...10.10

Del. quantity cm3/ : 8.6...8.8

100 s : (8.4...9.0)

Spread cm3 : 0.3

100 s : (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.4...6.5

Del. quantity cm3/ : 1.9...2.3

100 s : (1.6...2.5)

Spread cm3 : 0.3

100 s : (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350
travel mm : 8.30...8.50

2nd speed rpm : 1460
travel mm : 9.10...9.50

3rd speed rpm : 550
travel mm : 3.10...3.70

4th speed rpm : 350
travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1510

Rack travel in mm : 6.60...9.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del. quantity : 86.0...88.0

1000 : (84.0...90.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 45...50

Testing:
1st rack travel in: 9.00
Speed rpm : 1360...1380
2nd rack travel in: 4.00
Speed rpm : 1460...1470
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 10...18
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.4

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.40...6.50

CONSTANT REGULATION
Speed rpm : 300...450

START CUT-OUT

Speed 1/min : 220 (280)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 1300
Del. quantity cm³/ : 88.0...92.0
1000 s: (86.0...94.0)
Spread cm³ : 5.00
1000 s: (7.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.00
Speed rpm : 1360...1380

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

E21

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.40...6.50
Del. quantity cm³/ : 19.0...23.0
1000 s: (16.5...25.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:
:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than n = 500 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7.6 S
Edition : 19.02.88
Replaces : 10.08.87
Test oil : ISO-4113

Combination no. : 0 403 446 193

Injection pump
Pump designation : PES6MW100/32ORS1159
EP type number : 0 413 406 146
Governor
Governor design. : RQV350...1300MW72-3
Governor no. : 0 420 083 142

Customer-spec. information
Customer : NAVISTAR

Engine : DT-466

1st version kW : 136.0
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 10.60...10.70

Del. quantity cm3/ : 9.0...9.2

100 s : (8.8...9.4)

Spread cm3 : 0.3

100 s : (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.4...6.5

Del. quantity cm3/ : 1.6...2.0

100 s : (1.3...2.2)

Spread cm3 : 0.3

100 s : (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1250

travel mm : 7.80...8.00

2nd speed rpm : 1340

travel mm : 8.80...9.20

3rd speed rpm : 500

travel mm : 2.60...3.20

4th speed rpm : 350

travel mm : 1.30...1.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del. quantity : 90.0...92.0

1000 : (88.0...94.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 46...51

Testing:
1st rack travel in: 9.60
Speed rpm : 1370...1390
2nd rack travel in: 4.00
Speed rpm : 1475...1485
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 11...19
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.4

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.40...6.50

CONSTANT REGULATION

Speed rpm : 370...500

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 1200
Del. quantity cm³/ : 94.0...98.0
1000 s: (92.0...100.0)
Spread cm³ : 6.50
1000 s: (7.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.60
Speed rpm : 1370...1390

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

E23

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.40...6.50
Del. quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than $n = 500$ 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R20
 Edition : 19.02.88
 Replaces : 31.07.87
 Test oil : ISO-4113

Combination no. : 0 403 446 194

Injection pump
 Pump designation : PES6MM100/32ORS1112
 EP type number : 0 413 406 108
 Governor
 Governor design. : RQV350...1300MM46-12
 Governor no. : 0 420 083 143

Customer-spec. information
 Customer : NAVISTAR

Engine : DT-466

1st version kW : 154.5
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
 assembly : 1 688 901 016

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 10.80...10.90

Del. quantity cm³/ : 10.3...10.5

100 s: (10.1...10.7)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 5.5...5.6

Del. quantity cm³/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350

travel mm : 8.30...8.50

2nd speed rpm : 1460

travel mm : 9.10...9.50

3rd speed rpm : 550

travel mm : 3.10...3.70

4th speed rpm : 350

travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1510

Rack travel in mm : 6.60...9.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Aneroid pressure h: 800

Del. quantity : 103.0...105.0

1000 : (101.0...107.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 44...49

Testing:

1st rack travel in: 9.80

Speed rpm : 1365...1385

2nd rack travel in: 4.00

Speed rpm : 1470...1480

4th rack travel in: 1500

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 9...17

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 5.5

Testing:

Speed rpm : 100

Minimum rack travel: 7.30

Speed rpm : 350

Rack travel in mm : 5.50...5.60

CONSTANT REGULATION

Speed rpm : 360...450

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Rack travel in mm : 170

Contr.-rod trav.mm: 10.40...10.50

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 10.10...10.20

2nd pressure hPa : 230

Rack travel in m: 10.60...10.90

3rd pressure hPa : 800

Rack travel in m: 10.80...10.90

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 800

E25

Speed rpm : 1300

Del.quantity cm3/ : 105.0...109.0

1000 s: (103.0...111.0)

Spread cm3 : 5.00

1000 s: (7.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 87.0...89.0

1000 s: (85.0...91.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.80

Speed rpm : 1365...1385

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...180.0

1000 s: (137.0...183.0)

Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350

Rack travel in mm : 5.50...5.60

Del.quantity cm3/ : 16.0...20.0

1000 s: (13.5...22.5)

Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than n = 500 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R21
Edition : 19.02.88
Replaces : 02.11.87
Test oil : ISO-4113

Combination no. : 0 403 446 195

Injection pump
Pump designation : PES6MW100/320RS1112
EP type number : 0 413 406 108
Governor
Governor design. : RQV350...1200MW46-13
Governor no. : 0 420 083 144

Customer-spec. information
Customer : NAVISTAR

Engine : DTA-466

1st version kW : 180.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 12.30...12.40

Del. quantity cm³/ : 11.7...11.9

100 s: (11.5...12.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.3...6.4

Del. quantity cm³/ : 1.9...2.3

100 s: (1.6...2.5)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350

travel mm : 8.30...8.50

2nd speed rpm : 1460

travel mm : 9.10...9.50

3rd speed rpm : 550

travel mm : 3.10...3.70

4th speed rpm : 350

travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 800

Del. quantity : 117.5...119.5

1000 : (115.5...121.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 43...48

Testing:

1st rack travel in: 11.30
Speed rpm : 1265...1285
2nd rack travel in: 4.00
Speed rpm : 1395...1405
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 12...20
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.3

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.30...6.40

CONSTANT REGULATION

Speed rpm : 360...450

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 190
Contr.-rod trav.mm: 11.20...11.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.60...10.70
2nd pressure hPa : 360
Rack travel in m: 11.90...12.20
3rd pressure hPa : 800
Rack travel in m: 12.30...12.40

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 800

E28

Speed rpm : 1200
Del.quantity cm3/ : 120.0...124.0
1000 s: (118.0...126.0)
Spread cm3 : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 86.0...88.0
1000 s: (84.0...90.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1265...1285

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.30...6.40
Del.quantity cm3/ : 19.0...23.0
1000 s: (16.5...25.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than n = 500 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R23
Edition : 19.02.88
Replaces : 10.08.87
Test oil : ISO-4113

Combination no. : 0 403 446 196

Injection pump
Pump designation : PES6MM100/320RS1112
EP type number : 0 413 406 108
Governor
Governor design. : RQV350...1200MW46-14
Governor no. : 0 420 083 145

Customer-spec. information
Customer : NAVISTAR

Engine : DTA-466

1st version kW : 169.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.40...11.50

Del.quantity cm3/ : 10.4...10.6

100 s: (10.2...10.8)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.2...6.3

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350

travel mm : 8.30...8.50

2nd speed rpm : 1460

travel mm : 9.10...9.50

3rd speed rpm : 550

travel mm : 3.10...3.70

4th speed rpm : 350

travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 800

Del.quantity : 104.0...106.0

1000 : (102.0...108.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 44...49

Testing:

1st rack travel in: 10.40
Speed rpm : 1250...1270
2nd rack travel in: 4.00
Speed rpm : 1390...1400
4th rack travel in: 1460
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 12...20
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.2

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.20...6.30

CONSTANT REGULATION

Speed rpm : 360...450

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 180
Contr.-rod trav.mm: 10.80...10.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.50...10.60
2nd pressure hPa : 270
Rack travel in m: 11.10...11.20
3rd pressure hPa : 800
Rack travel in m: 11.40...11.50

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 800

F03

Speed rpm : 1200
Del.quantity cm3/ : 107.0...111.0
1000 s: (105.0...113.0)
Spread cm3 : 6.50
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 84.0...86.0
1000 s: (82.0...88.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1250...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.20...6.30
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than n = 500 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R24
Edition : 19.02.88
Replaces : 02.11.87
Test oil : ISO-4113

Combination no. : 0 403 446 197

Injection pump
Pump designation : PES6MW100/320RS1112
EP type number : 0 413 406 108
Governor
Governor design. : RQV350...1200MW46-15
Governor no. : 0 420 083 146

Customer-spec. information
Customer : NAVISTAR

Engine : DTA-466

1st version kW : 158.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.00...11.10

Del. quantity cm³/ : 9.9...10.1

100 s: (9.7...10.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.3...6.4

Del. quantity cm³/ : 1.9...2.3

100 s: (1.6...2.5)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350

travel mm : 8.30...8.50

2nd speed rpm : 1460

travel mm : 9.10...9.50

3rd speed rpm : 550

travel mm : 3.10...3.70

4th speed rpm : 350

travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 800

Del. quantity : 99.0...101.0

1000 : (97.0...103.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 43...48

Testing:

1st rack travel in: 10.00
Speed rpm : 1245...1265
2nd rack travel in: 4.00
Speed rpm : 1380...1390
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 10...18
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.3

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.30...6.40

CONSTANT REGULATION

Speed rpm : 360...450

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 200
Contr.-rod trav.mm: 10.70...10.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.40...10.50
2nd pressure hPa : 280
Rack travel in m: 10.80...11.10
3rd pressure hPa : 800
Rack travel in m: 11.00...11.10

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 800

F06

Speed rpm : 1200
Del.quantity cm3/ : 101.0...105.0
1000 s: (99.0...107.0)
Spread cm3 : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 84.0...86.0
1000 s: (82.0...88.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1245...1265

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.30...6.40
Del.quantity cm3/ : 19.0...23.0
1000 s: (16.5...25.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than n = 500 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7.6 T
Edition : 19.02.88
Replaces : 10.08.87
Test oil : ISO-4113

Combination no. : 0 403 446 198

Injection pump
Pump designation : PES6MW100/320RS1160
EP type number : 0 413 406 147
Governor
Governor design. : RQV350...1200MW46-16
Governor no. : 0 420 083 147

Customer-spec. information
Customer : NAVISTAR

Engine : DTA-466

1st version kW : 176.4
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 12.30...12.40

Del. quantity cm3/ : 11.8...12.0

100 s: (11.6...12.2)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.5...6.6

Del. quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350

travel mm : 8.30...8.50

2nd speed rpm : 1460

travel mm : 9.10...9.50

3rd speed rpm : 550

travel mm : 3.10...3.70

4th speed rpm : 350

travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.60...9.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 800

Del. quantity : 118.0...120.0

1000 : (116.0...122.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 44...49

Testing:

1st rack travel in: 11.30
Speed rpm : 1260...1280
2nd rack travel in: 4.00
Speed rpm : 1385...1395
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 12...20
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.5

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.50...6.60

CONSTANT REGULATION

Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 800
Rack travel in mm : 180
Contr.-rod trav.mm: 10.30...10.40

Measurement

Speed 1/min : 800

1st pressure hPa : -
Rack travel in m: 10.00...10.10
2nd pressure hPa : 480
Rack travel in m: 11.80...12.10
3rd pressure hPa : 800
Rack travel in m: 12.30...12.40

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 800

F09

Speed rpm : 1200
Del.quantity cm3/ : 120.0...124.0
1000 s: (118.0...126.0)
Spread cm3 : 6.50
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 800
Del.quantity cm3/ : 80.0...82.0
1000 s: (78.0...84.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1260...1280

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.50...6.60
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than n = 500 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 T 1
Edition : 19.02.88
Replaces : 10.08.87
Test oil : ISO-4113

Combination no. : 0 403 446 199

Injection pump
Pump designation : PES6MM100/32ORS1160
EP type number : 0 413 406 147
Governor
Governor design. : RQV350...1200MW46-17
Governor no. : 0 420 083 148

Customer-spec. information
Customer : NAVISTAR

Engine : DTA-466

1st version kW : 154.5
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.30...11.40

Del. quantity cm3/ : 10.1...10.3

100 s: (9.9...10.5)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.3...6.4

Del. quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350

travel mm : 8.30...8.50

2nd speed rpm : 1460

travel mm : 9.10...9.50

3rd speed rpm : 550

travel mm : 3.10...3.70

4th speed rpm : 350

travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1380

Rack travel in mm : 6.60...9.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 800

Del. quantity : 101.0...103.0

1000 : (99.0...105.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 44...49

Testing:

1st rack travel in: 10.30

Speed rpm : 1260...1280

2nd rack travel in: 4.00

Speed rpm : 1375...1385

4th rack travel in: 1500

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 10...18

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 6.3

Testing:

Speed rpm : 100

Minimum rack travel: 9.00

Speed rpm : 350

Rack travel in mm : 6.30...6.40

CONSTANT REGULATION

Speed rpm : 300...450

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Rack travel in mm : 190

Contr.-rod trav.mm: 10.60...10.70

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 10.20...10.30

2nd pressure hPa : 290

Rack travel in m: 11.10...11.20

3rd pressure hPa : 800

Rack travel in m: 13.30...11.40

START CUT-OUT

Speed 1/min : 220 (210)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 800

F12

Speed rpm : 1200

Del.quantity cm3/ : 104.0...108.0
1000 s: (102.0...110.0)

Spread cm3 : 6.50
1000 s: (7.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 75.5...77.5
1000 s: (73.5...79.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.30

Speed rpm : 1260...1280

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...180.0
1000 s: (137.0...183.0)

Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350

Rack travel in mm : 6.30...6.40

Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)

Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

In unlatched condition, do not
operate greater than n = 500 1/min

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 C 4
Edition : 29.01.88
Replaces : 21.08.87
Test oil : ISO-4113

Combination no. : 0 403 466 105

Injection pump
Pump designation : PES6MW100/12ORS1137
EP type number : 0 413 406 131
Governor
Governor design. : RSV400...1100MW2A319
-4

Governor no. : 0 420 085 080

Customer-spec. information
Customer : CUMMINS/US

Engine : 6 CTA-8.3 L

1st version kW : 171.5
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 14.00...14.10

Del. quantity cm3/ : 15.0...15.2

100 s : (14.8...15.4)

Spread cm3 : 0.3

100 s : (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 7.0...7.1

Del. quantity cm3/ : 1.6...2.0

100 s : (1.3...2.2)

Spread cm3 : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del. quantity : 150.5...152.5

1000 : (148.5...154.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 40...48

Testing:

1st rack travel in: 10.90

Speed rpm : 1150...1160

2nd rack travel in: 4.00

Speed rpm : 1200...1230
4th rack travel in: 1300
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 7.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 7.00...7.10

SET IDLE AUXILIARY SPRING

Rack travel in mm : 4.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 14.00...14.10
2nd speed rpm : 1100
Rack travel in m: 12.30...12.50
3rd speed rpm : 950
Rack travel in m: 13.60...14.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100
Del.quantity cm³/ : 131.0...133.0
1000 s: (128.0...136.0)
Spread cm³ : 5.00
1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.90
Speed rpm : 1150...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 125.0...145.0
1000 s: (122.0...148.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 7.00...7.10

F15

Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Starting/full-load transition speed
from holding magnet = 500 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 6,2 F
Edition : 05.02.88
Replaces : -
Test oil : ISO-4113
Combination no. : 0 403 466 108
Injection pump
Pump designation : PES6MW100/320/3RS116
2
EP type number : 0 413 406 149
Governor
Governor design. : RSV325...1200MWOA326
Governor no. : 0 420 085 085

Customer-spec. information
Customer : MWM

Engine : TD 226 B-6

1st version kW : 136.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 10.40...10.50

Del. quantity cm³/ : 11.6...11.8

100 s : (11.4...12.0)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 325.0

Rack travel in mm : 6.6...6.7

Del. quantity cm³/ : 0.8...1.2

100 s : (0.6...1.4)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: 3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h : 700

Del. quantity : 116.5...118.5

1000 : (114.5...120.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 40...48

Testing:

1st rack travel in: 9.40

Speed rpm : 1240...1250

2nd rack travel in: 4.00

Speed rpm : 1260...1300

4th rack travel in: 1380

Speed rpm : 0.30...1.70

5th rack travel in: 1295...1325

Speed rpm : 4.00

LOW IDLE 1

Control lever

position degrees: 15...23

Setting point w/out bumper spring

Speed rpm : 325

Rack travel in mm : 6.6

Testing:

Speed rpm : 100

Minimum rack travel: 19.00

Speed rpm : 325

Rack travel in mm : 6.60...6.70

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200

Rack travel in m: 10.40...10.50

2nd speed rpm : 800

Rack travel in m: 10.60...10.70

3rd speed rpm : 500

Rack travel in m: 10.70...10.80

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Rack travel in mm : -

Contr.-rod trav.mm: 8.50...8.60

Measurement

Speed 1/min : 500

1st pressure hPa : 270

Rack travel in m: 9.10...9.20

2nd pressure hPa : 450

Rack travel in m: 9.90...10.20

3rd pressure hPa : 700

Rack travel in m: 10.60...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 800

Del.quantity cm3/ : 113.5...116.5

1000 s: (110.5...118.5)

Spread cm3 : 5.00

1000 s: (7.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 62.5...64.5

1000 s: (60.5...66.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40

Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 90.0...110.0

1000 s: (87.0...113.0)

Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 325

Rack travel in mm : 6.60...6.70

Del.quantity cm3/ : 8.0...12.0

1000 s: (6.0...14.0)

Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

:

Test electrically-released starting quantity (EES) with 12 volts

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 4,5 G
Edition : 29.01.88
Replaces : 31.10.86
Test oil : ISO-4113

Combination no. : 0 403 474 001

Injection pump
Pump designation : PES4MW100/32ORS1102
EP type number : 0 413 404 101
Governor
Governor design. : RSV300...1000MW1A315
Governor no. : 0 420 085 025

Customer-spec. information
Customer : VOLVO-BM

Engine : TD45

1st version kW : 84.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.90...12.00

Del. quantity cm³/ : 10.9...11.1

100 s : (10.7...11.3)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del. quantity cm³/ : 1.3...1.7
100 s : (1.0...1.9)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 109.0...111.0
1000 : (107.0...113.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 10.90

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1055...1085

4th rack travel in: 1200

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever

position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.1
Speed rpm : 300
Rack travel in mm : 5.10...5.20
Rack travel in mm : 2.00
Speed rpm : 360...420

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 1000
Del.quantity cm3/ : 110.0...114.0
1000 s: 107.5...116.5)
Spread cm3 : 5.50
1000 s: (7.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.90
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...140.0
1000 s: (127.0...143.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm3/ : 13.0...17.0
1000 s: (10.5...19.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

Set 12.6...12.7 mm control-rod travel
at lower full-load stop with
n = 1000 1/min.
Make full-load setting at upper full-
load stop in accordance with test
specifications.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 4,0 A 18
 Edition : 19.02.88
 Replaces : 13.05.87
 Test oil : ISO-4113

Combination no. : 0 403 474 002

Injection pump
 Pump designation : PES4MW100/72ORS1127
 EP type number : 0 413 404 103
 Governor
 Governor design. : RSV350...1200MWOA322
 Governor no. : 0 420 085 075

Customer-spec. information
 Customer : DB

Engine : OM364A

1st version kW : 66.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 11.30...11.40

Del. quantity cm³/ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 7.1...7.2

Del. quantity cm³/ : 0.8...1.0

100 s: (0.6...1.4)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del. quantity : 78.0...80.0

1000 : (76.0...82.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 52...60

Testing:

1st rack travel in: 10.30

Speed rpm : 1240...1245

2nd rack travel in: 4.00

Speed rpm : 1322...1335

3rd rack travel in: 4.00

Speed rpm : 1355...1385

4th rack travel in: 1450

Speed rpm : 0.30...1.70

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 7.1

Testing:

Speed rpm : 100

Minimum rack trave: 19.00

Speed rpm : 350

Rack travel in mm : 7.10...7.20

Rack travel in mm : 2.00

Speed rpm : 480...540

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200

Rack travel in m: 11.30...11.40

2nd speed rpm : 600

Rack travel in m: 12.10...12.20

3rd speed rpm : 900

Rack travel in m: 11.70...11.80

4th speed rpm : 950

Rack travel in m: 11.50...11.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600

Del.quantity cm3/ : 68.0...70.0

1000 s: (66.0...72.0)

Spread cm3 : 5.00

1000 s: (7.0)

Speed rpm : 900

Del.quantity cm3/ : 77.0...79.0

1000 s: (75.0...81.0)

Spread cm3 : 5.00

1000 s: (7.00)

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 85.0...95.0

1000 s: (82.0...98.0)

LOW IDLE

Speed rpm : 350

Rack travel in mm : 7.10...7.20

Del.quantity cm3/ : 8.0...10.0

1000 s: (6.0...14.0)

Spread cm3 : 3.50

1000 s: (5.00)

Remarks:

;

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R 5
Edition : 19.02.88
Replaces : 11.85
Test oil : ISO-4113

Combination no. : 0 403 476 024

Injection pump
Pump designation : PES6MW100/32ORS1121
EP type number : 0 413 406 115
Governor
Governor design. : RSV450...1200MW2A313
-1

Governer no. : 0 420 085 040

Customer-spec. information
Customer : NAVI-STAR

Engine : DTI-466C

1st version kW : 175.2
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 12.30...12.40

Del.quantity cm3/ : 12.2...12.4

100 s: (12.0...12.6)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 450.0

Rack travel in mm : 5.7...5.8

Del.quantity cm3/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 900

Del.quantity : 122.0...124.0

1000 : (120.0...126.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 45...50

Testing:

1st rack travel in: 10.90

Speed rpm : 1240...1250

2nd rack travel in: 4.00

Speed rpm : 1320...1330

4th rack travel in: 1400
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 450
Rack travel in mm : 5.7

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 450
Rack travel in mm : 5.70...5.80

SET IDLE AUXILIARY SPRING

Rack travel in mm : 4.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200
Rack travel in m: 11.90...12.00
2nd speed rpm : 1150
Rack travel in m: 11.90...12.00
3rd speed rpm : 800
Rack travel in m: 12.30...12.40
4th speed rpm : 600
Rack travel in m: 12.30...12.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 12.30...12.40

Measurement

Speed 1/min : 500

1st pressure hPa : 260
Rack travel in m: 11.10...11.20
2nd pressure hPa : 540
Rack travel in m: 11.90...12.00
3rd pressure hPa : -
Rack travel in m: 10.70...10.80

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 1200
Del.quantity cm³/ : 118.0...120.0
1000 s: (116.0...122.0)
Spread cm³ : 6.50
1000 s: (7.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 91.0...93.0
1000 s: (89.0...95.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.90
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...180.0
1000 s: (137.0...183.0)

LOW IDLE

Speed rpm : 450
Rack travel in mm : 5.70...5.80
Del.quantity cm³/ : 18.0...22.0
1000 s: (15.5...24.5)
Spread cm³ : 3.50
1000 s: (5.00)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

Start-of-delivery mark: stop lever
25° toward shutoff: control-rod
travel = 9...12 mm. (Free travel of
stop lever must have been overcome
beforehand.)

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before

shutoff.

Check hydraulic latching of starting
fuel delivery with 1.5 bar air.

Position idle auxiliary spring to make
contact, then turn back 1/4 rotation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7.6 R 3
Edition : 19.02.88
Replaces : 11.85
Test oil : ISO-4113

Combination no. : 0 403 476 025

Injection pump
Pump designation : PES6MW100/32ORS1121
EP type number : 0 413 406 115
Governor
Governor design. : RSV450...1200MW2A313
-2
Governor no. : 0 420 085 041

Customer-spec. information
Customer : NAVI-STAR

Engine : DTI-466C

1st version kW : 156.6
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 172...175

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 10.60...10.70

Del. quantity cm³/ : 10.8...11.0

100 s : (10.6...11.2)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 450.0

Rack travel in mm : 4.8...4.9

Del. quantity cm³/ : 1.8...2.2

100 s : (1.5...2.4)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 900

Del. quantity : 108.5...110.5

1000 : (106.5...112.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 49...54

Testing:

1st rack travel in: 8.90

Speed rpm : 1260...1270

2nd rack travel in: 4.00

Speed rpm : 1355...1365

4th rack travel in: 1400
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 21...29
Setting point w/out bumper spring
Speed rpm : 450
Rack travel in mm : 4.8

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 450
Rack travel in mm : 4.80...4.90

SET IDLE AUXILIARY SPRING

Rack travel in mm : 4.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 9.90...10.00
2nd speed rpm : 850
Rack travel in m: 10.60...10.70
3rd speed rpm : 800
Rack travel in m: 10.30...10.70

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 10.60...10.70

Measurement

Speed 1/min : 500

1st pressure hPa : 320
Rack travel in m: 9.30...9.40
2nd pressure hPa : 570
Rack travel in m: 10.20...10.30
3rd pressure hPa : -
Rack travel in m: 9.00...9.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 1200
Del.quantity cm³/ : 102.5...104.5
1000 s: (116.0...122.0)
Spread cm³ : 6.50
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 78.0...80.0
1000 s: (76.0...82.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.90
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 450
Rack travel in mm : 4.80...4.90
Del.quantity cm³/ : 18.0...22.0
1000 s: (15.5...24.5)
Spread cm³ : 3.50
1000 s: (5.00)

Remarks:

:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

Start-of-delivery mark: stop lever
25° toward shutoff: control-rod
travel = 9...12 mm. (Free travel of
stop lever must have been overcome
beforehand.)

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

Check hydraulic latching of starting
fuel delivery with 1.5 bar air.

Position idle auxiliary spring to make
contact, then turn back 1/4 rotation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R 2
Edition : 19.02.88
Replaces : 11.85
Test oil : ISO-4113

Combination no. : 0 403 476 026

Injection pump
Pump designation : PES6MW100/32ORS1122
EP type number : 0 413 406 116
Governor
Governor design. : RSV350...1050MW2/312
-4
Governor no. : 0 420 085 042

Customer-spec. information
Customer : NAVI-STAR

Engine : DT 466

1st version kW : 118.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.00...13.10

Del. quantity cm³/ : 10.2...10.4

100 s : (10.0...10.6)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 6.2...6.3
Del. quantity cm³/ : 1.3...1.7
100 s : (1.0...1.9)
Spread cm³ : 0.3
100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Del. quantity : 102.0...104.0
1000 : (100.0...106.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 38...44

Testing:
1st rack travel in: 11.10
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1155...1165
4th rack travel in: 1200

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever

position degrees: 15...24

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 6.2

Testing:

Speed rpm : 100

Minimum rack trave: 19.00

Speed rpm : 350

Rack travel in mm : 6.20...6.30

SET IDLE AUXILIARY SPRING

Rack travel in mm : 4.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1050

Rack travel in m: 11.90...12.00

2nd speed rpm : 700

Rack travel in m: 13.00...13.10

3rd speed rpm : 600

Rack travel in m: 13.30...13.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050

Del.quantity cm3/ : 91.0...93.0

1000 s: (88.0...96.0)

Spread cm3 : 6.50

1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.10

Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...180.0

1000 s: (137.0...183.0)

Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350

Rack travel in mm : 6.20...6.30

Del.quantity cm3/ : 13.0...17.0

1000 s: (10.5...19.5)

G01

Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

Start-of-delivery mark: stop lever
25° toward shutoff: control-rod
travel = 9...12 mm. (Free travel of
stop lever must have been overcome
beforehand.)

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

Check hydraulic latching of starting
fuel delivery with 1.5 bar air.

Position idle auxiliary spring to make
contact, then turn back 1/4 rotation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 P 4
Edition : 19.02.88
Replaces : 24.08.87
Test oil : ISO-4113

Combination no. : 0 403 476 030

Injection pump
Pump designation : PES6MW100/320RS1109
EP type number : 0 413 406 104
Governor
Governor design. : RSV350...1250MW2/313
-3

Governer no. : 0 420 085 049

Customer-spec. information
Customer : NAVI-STAR

Engine : DTI-466 C

1st version kW : 160.0
Rated speed : 2500
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Phasing :
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800
Rack travel in mm : 13.40...13.50
Del. quantity cm³/ : 11.6...11.8
100 s : (11.4...12.0)
Spread cm³ : 0.3
100 s : (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 6.3...6.4
Del. quantity cm³/ : 1.8...2.3
100 s : (1.6...2.5)
Spread cm³ : 0.3
100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 800
Aneroid pressure h: 900
Del. quantity : 116.5...118.5
1000 : (114.5...120.5)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 52...57

Testing:
1st rack travel in: 11.20

Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1390...1400
4th rack travel in: 1470
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.3

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 350
Rack travel in mm : 6.30...6.40

SET IDLE AUXILIARY SPRING

Speed rpm : 4.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 800
Rack travel in m: 13.40...13.50
2nd speed rpm : 1250
Rack travel in m: 12.20...12.30
3rd speed rpm : 840
Rack travel in m: 13.40...13.50
4th speed rpm : 1200
Rack travel in m: 12.20...12.30

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 13.40...13.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.40...11.50
2nd pressure hPa : 200
Rack travel in m: 11.80...11.90
3rd pressure hPa : 490
Rack travel in m: 12.70...13.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 1250

Del.quantity cm3/ : 105.0...107.0
1000 s: (103.0...109.0)
Spread cm3 : 6.50
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 82.0...84.0
1000 s: (79.0...87.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.20
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.30...6.40
Del.quantity cm3/ : 18.0...23.0
1000 s: (16.5...25.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:
Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 6,1 M
 Edition : 12.02.88
 Replaces : 11.85
 Test oil : ISO-4113
 Combination no. : 0 403 476 043A
 Injection pump
 Pump designation : PES6MW100/32ORS1132
 EP type number : 0 413 406 124
 Governor
 Governor design. : RSV300...1050MW4A308
 -2
 Governor no. : 0 420 085 050

Customer-spec. information
 Customer : VOLVO-PENTA

Engine : TD 61 ACE

1st version kW : 112.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.90...3.00
 : (2.85...3.05)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.80...10.90

Del. quantity cm3/ : 8.5...8.7

100 s: (8.3...8.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.1...6.2

Del. quantity cm3/ : 1.2...1.6

100 s: (0.9...1.8)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del. quantity : 85.0...87.0

1000 : (83.0...89.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 65...73

Testing:

1st rack travel in: 9.80

Speed rpm : 1090...1100

2nd rack travel in: 4.00

Speed rpm : 1140...1170

4th rack travel in: 1250

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 25...33
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.6

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.60...5.70

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.80
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 100.0...110.0
1000 s: (107.0...113.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.10...6.20
Del. quantity cm3/ : 12.0...16.0
1000 s: (9.5...18.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R 4
Edition : 19.02.88
Replaces : 12.09.86
Test oil : ISO-4113

Combination no. : 0 403 476 047

Injection pump
Pump designation : PES6MW100/32ORS1121
EP type number : 0 413 406 115
Governor
Governor design. : RSV500...1250MW2/312
-5

Governer no. : 0 420 085 058

Customer-spec. information
Customer : NAVI-STAR

Engine : DTI-466C

1st version kW : 167.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 950

Rack travel in mm : 11.30...11.40

Del. quantity cm³/ : 10.8...11.0

100 s: (10.6...11.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 500.0

Rack travel in mm : 5.4...5.5

Del. quantity cm³/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 950

Del. quantity : 108.0...110.0

1000 : (106.0...112.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 50...55

Testing:

1st rack travel in: 10.30

Speed rpm : 1315...1325

2nd rack travel in: 4.00

Speed rpm : 1370...1380

4th rack travel in: 1400

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever

position degrees: 24...32

Setting point w/out bumper spring

Speed rpm : 500

Rack travel in mm : 5.4

Testing:

Speed rpm : 100

Minimum rack travel: 19.00

Speed rpm : 500

Rack travel in mm : 5.40...5.50

SET IDLE AUXILIARY SPRING

Rack travel in mm : 4.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1250

Del. quantity cm³/ : 110.5...114.5

1000 s: (108.5...116.5)

Spread cm³ : 6.50

1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.30

Speed rpm : 1315...1325

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 140.0...180.0

1000 s: (137.0...183.0)

Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 500

Rack travel in mm : 5.40...5.50

Del. quantity cm³/ : 16.0...20.0

1000 s: (13.5...22.5)

Spread cm³ : 3.50

1000 s: (5.00)

Remarks:

:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

Start-of-delivery mark: stop lever
25° toward shutoff: control-rod
travel = 9...12 mm. (Free travel of
stop lever must have been overcome
beforehand.)

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before
shutoff.

Check hydraulic latching of starting
fuel delivery with 1.5 bar air.

Position idle auxiliary spring to make
contact, then turn back 1/4 rotation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R
Edition : 19.02.88
Replaces : 24.08.87
Test oil : ISO-4113

Combination no. : 0 403 476 050

Injection pump
Pump designation : PES6MW100/32ORS1121
EP type number : 0 413 406 115
Governor
Governor design. : RSV500...1250MW2A312
-6
Governor no. : 0 420 085 063

Customer-spec. information
Customer : NAVI-STAR

Engine : DT-466 C

1st version kW : 160.3
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 950

Rack travel in mm : 11.80...11.90

Del.quantity cm3/ : 10.8...11.0

100 s: (10.6...11.2)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 500.0

Rack travel in mm : 6.2...6.3

Del.quantity cm3/ : 1.8...2.2

100 s: (1.3...2.6)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 950

Del.quantity : 108.0...110.0

1000 : (106.0...112.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 49...54

Testing:

1st rack travel in: 10.60

Speed rpm : 1295...1305

2nd rack travel in: 4.00

Speed rpm : 1365...1375

4th rack travel in: 1400

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever

position degrees: 22...30

Setting point w/out bumper spring

Speed rpm : 500

Rack travel in mm : 6.2

Testing:

Speed rpm : 100

Minimum rack travel: 19.00

Speed rpm : 500

Rack travel in mm : 6.20...6.30

SET IDLE AUXILIARY SPRING

Rack travel in mm : 4.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1250

Del. quantity cm³/ : 107.0...111.0

1000 s: (105.0...113.0)

Spread cm³ : 6.50

1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.60

Speed rpm : 1295...1305

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 140.0...180.0

1000 s: (137.0...183.0)

Rack travel in mm : 19.00...21.00

HIGH IDLE

1st version

Speed rpm : 1365

Del. quantity cm³/ : 15.0...23.0

1000 s: (14.0...24.0)

LOW IDLE

Speed rpm : 500

Rack travel in mm : 6.20...6.30

Del. quantity cm³/ : 18.0...22.0

1000 s: (13.5...26.5)

Spread cm³ : 3.50

1000 s: (5.00)

Remarks:

:

Perform pump setting only with IH hose with restriction of 1.2 mm diameter.

Before checking sleeve position, first adjust latching.

Start-of-delivery mark: stop lever 25° toward shutoff: control-rod travel = 9...12 mm. (Free travel of stop lever must have been overcome beforehand.)

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before shutoff.

Position idle auxiliary spring to make contact, then turn back 1/4 rotation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R19
Edition : 19.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 403 476 051

Injection pump
Pump designation : PES6MW100/32ORS1121
EP type number : 0 413 406 115
Governor
Governor design. : RSV350...1200MW2A321
Governor no. : 0 420 085 064

Customer-spec. information
Customer : NAVI-STAR

Engine : DT-466 C

1st version kW : 93.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values ____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 9.50...9.60

Del.quantity cm3/ : 6.8...7.0

100 s: (6.6...7.2)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.5...6.6

Del.quantity cm3/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del.quantity : 68.0...70.0

1000 : (66.0...72.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 54...59

Testing:

1st rack travel in: 7.60

Speed rpm : 1240...1260

2nd rack travel in: 4.00

Speed rpm : 1295...1305

4th rack travel in: 1400

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever

position degrees: 24...32

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 6.5

Testing:

Speed rpm : 100

Minimum rack travel: 19.00

Speed rpm : 350

Rack travel in mm : 6.50...6.60

SET IDLE AUXILIARY SPRING

Rack travel in mm : 4.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 800

Rack travel in m: 9.50...9.60

2nd speed rpm : 1200

Rack travel in m: 8.60...8.70

3rd speed rpm : 1150

Rack travel in m: 8.80...8.90

4th speed rpm : 1050

Rack travel in m: 9.00...9.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1200

Del.quantity cm³/ : 59.5...61.5

1000 s: (56.5...64.0)

Spread cm³ : 6.50

1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.60

Speed rpm : 1240...1260

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 140.0...180.0

1000 s: (137.0...183.0)

Rack travel in mm : 19.00...21.00

HIGH IDLE

1st version

Speed rpm : 1305

Del.quantity cm³/ : 12.0...20.0
1000 s: (11.0...20.0)

LOW IDLE

Speed rpm : 350

Rack travel in mm : 6.50...6.60

Del.quantity cm³/ : 18.0...22.0

1000 s: (15.5...24.5)

Spread cm³ : 3.50

1000 s: (5.00)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

Start-of-delivery mark: stop lever
25° toward shutoff: control-rod
travel = 9...12 mm. (Free travel of
stop lever must have been overcome
beforehand.)

Set shutoff stop 1.5...2.0 mm before
shutoff.

Position idle auxiliary spring to make
contact, then turn back 1/4 rotation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 R18
Edition : 19.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 403 476 053

Injection pump
Pump designation : PES6MW100/32ORS1121
EP type number : 0 413 406 115
Governor
Governor design. : RSV350...1050MW2A321
-2
Governor no. : 0 420 085 066

Customer-spec. information
Customer : NAVI-STAR

Engine : DT-466 C

1st version kW : 129.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 037

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 016

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.70...11.80

Del. quantity cm3/ : 10.5...10.7

100 s: (10.3...10.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.2...6.3

Del. quantity cm3/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 16.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 105.5...107.5

1000 : (103.5...109.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 40...45

Testing:

1st rack travel in: 9.70

Speed rpm : 1090...1110

2nd rack travel in: 4.00
Speed rpm : 1155...1165
4th rack travel in: 1400
Speed rpm : 0.30...1.70

LOW IDLE †

Control lever
position degrees: 14...22
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.2

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 350
Rack travel in mm : 6.20...6.30

SET IDLE AUXILIARY SPRING

Rack travel in mm : 4.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 700
Rack travel in m: 11.70...11.80
2nd speed rpm : 1050
Rack travel in m: 10.70...10.80
3rd speed rpm : 1000
Rack travel in m: 10.70...10.90
4th speed rpm : 900
Rack travel in m: 11.00...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050
Del. quantity cm³/ : 94.5...96.5
1000 s: (91.0...100.0)
Spread cm³ : 6.50
1000 s: (7.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1090...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...180.0
1000 s: (137.0...183.0)
Rack travel in mm : 19.00...21.00

HIGH IDLE

G13

1st version

Speed rpm : 1155
Del. quantity cm³/ : 12.0...20.0
1000 s: (11.0...21.0)

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.20...6.30
Del. quantity cm³/ : 18.0...22.0
1000 s: (15.5...24.5)
Spread cm³ : 3.50
1000 s: (5.00)

Remarks:

Perform pump setting only with IH hose
with restriction of 1.2 mm diameter.

Before checking sleeve position,
first adjust latching.

Start-of-delivery mark: stop lever
25° toward shutoff: control-rod
travel = 9...12 mm. (Free travel of
stop lever must have been overcome
beforehand.)

Set shutoff stop 1.5...2.0 mm before
shutoff.

Position idle auxiliary spring to make
contact, then turn back 1/4 rotation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 D 32
Edition : 05.02.88
Replaces : 05.06.87
Test oil : ISO-4113

Combination no. : 0 403 476 055

Injection pump
Pump designation : PES6MW100/720RS1144
EP type number : 0 413 406 138
Governor
Governor design. : RSV350...1200MW1A316
-3

Governer no. : 0 420 085 077

Customer-spec. information
Customer : DB

Engine : OM366A

1st version kW : 92.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 9.60...9.70

Del. quantity cm³/ : 6.6...6.8

100 s : (6.4...7.0)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.3...6.9

Del. quantity cm³/ : 1.0...1.2

100 s : (0.7...1.5)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 15.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del. quantity : 66.0...68.0

1000 : (64.0...70.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 58...66

Testing:

1st rack travel in: 8.60

Speed rpm : 1240...1245

2nd rack travel in: 4.00

Speed rpm : 1263...1276

3rd rack travel in: 8.60

Speed rpm : 1240...1255
4th rack travel in: 1450
Speed rpm : 0.30...1.70

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 6.6

Testing:

Speed rpm : 100

Minimum rack trave: 19.00

Speed rpm : 350

Rack travel in mm : 6.30...6.90

Rack travel in mm : 2.00

Speed rpm : 415...475

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200

Rack travel in m: 9.60...9.70

2nd speed rpm : 800

Rack travel in m: 10.50...10.60

3rd speed rpm : 950

Rack travel in m: 9.90...10.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del.quantity cm3/ : 68.0...70.0

1000 s: (66.0...72.0)

Spread cm3 : 5.00

1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.60

Speed rpm : 1240...1245

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 80.0...90.0

1000 s: (77.0...93.0)

Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350

Rack travel in mm : 6.30...6.90

Del.quantity cm3/ : 10.0...12.0

1000 s: (7.0...15.0)

Spread cm3 : 3.50
1000 s: (5.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 D 33
Edition : 05.02.88
Replaces : 31.07.87
Test oil : ISO-4113

Combination no. : 0 403 476 056

Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0 413 406 138
Governor
Governor design. : RSV350...1200MW1A316
-4

Governer no. : 0 420 085 078

Customer-spec. information
Customer : DB

Engine : OM366A

1st version kW : 100.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 10.20...10.30

Del. quantity cm³/ : 7.7...7.9

100 s: (7.5...8.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.1...6.7

Del. quantity cm³/ : 1.0...1.2

100 s: (0.7...1.5)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del. quantity : 77.0...79.0

1000 : (75.0...81.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 58...66

Testing:

1st rack travel in: 9.20

Speed rpm : 1240...1245

2nd rack travel in: 4.00

Speed rpm : 1271...1284

4th rack travel in: 1450

Speed rpm : 0.30...1.70
5th rack travel in: 1240...1255
Speed rpm : 9.20

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.4

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 350
Rack travel in mm : 6.10...6.70
Rack travel in mm : 2.00
Speed rpm : 415...475

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 10.20...10.30
2nd speed rpm : 800
Rack travel in m: 11.10...11.20
3rd speed rpm : 900
Rack travel in m: 11.00...11.20
4th speed rpm : 1050
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 76.0...78.0
1000 s: (74.0...81.0)
Spread cm3 : 5.00
1000 s: (7.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 80.0...90.0
1000 s: (77.0...93.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.10...6.70
Del.quantity cm3/ : 10.0...12.0
1000 s: (7.0...15.0)

Spread cm3 : 3.50
1000 s: (5.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 M
Edition : 29.01.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 403 476 060

Injection pump
Pump designation : PES6MW100/72ORS1161
EP type number : 0 413 400 148
Governor
Governor design. : RSV325...1150MW5A327
Governor no. : 0 420 085 084

Customer-spec. information
Customer : KHD

Engine : BF6L913C

1st version kW : 134.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 3.45...3.55
: (3.40...3.60)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.80...12.90

Del. quantity cm³/ : 12.3...12.5

100 s : (12.1...12.7)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 325.0

Rack travel in mm : 4.9...5.0

Del. quantity cm³/ : 1.0...1.4

100 s : (0.7...1.6)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 1000

Del. quantity : 123.0...125.0

1000 : (121.0...127.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 52...60

Testing:

1st rack travel in: 11.80

Speed rpm : 1200...1210

2nd rack travel in: 4.00

Speed rpm : 1245...1275

4th rack travel in: 1440

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 18...25
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 4.7

Testing:
Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 325
Rack travel in mm : 4.70...4.80
Rack travel in mm : 2.00
Speed rpm : 455...515

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.80...12.90
2nd speed rpm : 800
Rack travel in m: 13.20...13.30
3rd speed rpm : 900
Rack travel in m: 13.00...13.20
4th speed rpm : 1000
Rack travel in m: 12.80...13.00

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 500
Contr.-rod trav.mm: 11.60...11.70

Measurement
Speed 1/min : 500

1st pressure hPa : 1000
Rack travel in m: 13.20...13.30
2nd pressure hPa : -
Rack travel in m: 10.50...10.60
3rd pressure hPa : 650
Rack travel in m: 12.30...12.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 800
Del.quantity cm3/ : 125.0...129.0
1000 s: (123.0...131.0)
Spread cm3 : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 74.0...76.0
1000 s: (72.0...78.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.80
Speed rpm : 1200...1210

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 325
Rack travel in mm : 4.90...5.00
Del.quantity cm3/ : 10.0...14.0
1000 s: (7.5...16.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,8 A
 Edition : 29.02.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 400 083 259
 Injection pump
 Pump designation : PES6A90C41ORS2308
 Governor
 Governor design. : RQV300...1425AB740L

Customer-spec. information
 Customer : DAIMLER-BENZ-BRAS.

Engine : OM 352

1st version kW : 95.7
 Rated speed : 2850

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
 : (2,10...2,30)
 Rack travel in mm : 9,00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0,50 (0,75)

G20

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 9,00...9,10
 Del. quantity cm³/ : 4,5...5,0
 100 s : (4,3...5,2)
 Spread cm³ : 0,3
 100 s : (0,5)
 2nd speed rpm : 1000
 Rack travel in mm : 11,90...12,10
 Del. quantity cm³/ : 7,3...8,2
 100 s : (7,0...8,5)
 Spread cm³ : 0,4
 100 s : (0,55)
 3rd speed rpm : 200
 Rack travel in mm : 8,90...9,10
 Del. quantity cm³/ : 2,05...2,85
 100 s : (1,7...3,2)
 Spread cm³ : 0,25
 100 s : (0,45)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1400
 Del. quantity : 61,0...63,0
 1000 : (59,5...64,5)
 Spread cm³ : 3,0
 1000 : (5,0)

RATED SPEED

1st version
 Control lever
 position degrees: 62...70

Testing:
 1st rack travel in: 17,70
 Speed rpm : 1425
 2nd rack travel in: 16,70
 Speed rpm : 1465...1475
 3rd rack travel in: 1,50...1,80
 Speed rpm : 1650
 4th rack travel in: 1780
 Speed rpm : 0,00...1,00

LOW IDLE 1
 Control lever
 position degrees: 6...14

Testing:
 Speed rpm : 100
 Minimum rack trave: 6,60

Speed rpm : 250
Rack travel in mm : 5,50...7,00
Rack travel in mm : 5,00
Speed rpm : 330...370
Speed rpm : 770
Maximum rack trave: 1,00

START CUT-OUT

Speed 1/min : 220

BREAKAWAY

1st version
Speed rpm : 1425...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 13,7...14,3

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MM 2,6 A
Edition : 29.02.88
Replaces : -
Test oil : ISO-4113
Combination no. : 9 400 083 422
Injection pump
Pump designation : PES3A80D320/3RS1264
Governor
Governor design. : RSV350...1200A2B627R

Customer-spec. information
Customer : MM

Engine : D 225-3

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values ____

BEGINNING OF DELIVERY

Prestroke mm : 2,20...2,30
: (2,15...2,35)
Rack travel in mm : 10,50
Firing order : 1-2-3

Phasing : 0-120-240
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1000
Rack travel in mm : 9,00...9,10
Del. quantity cm³/ : 4,35...4,55
100 s: (4,15...4,75)
Spread cm³ : 0,25
100 s: (0,40)

2nd speed rpm : 1000
Rack travel in mm : 14,9...15,1
Del. quantity cm³/ : 10,65...11,15
100 s: (10,35...11,45)
Spread cm³ : 0,35
100 s: (0,45)
3rd speed rpm : 200
Rack travel in mm : 8,90...9,10
Del. quantity cm³/ : 2,95...3,75
100 s: (2,7...4,0)
Spread cm³ : 0,20
100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1180
Del. quantity : 50,5...51,5
1000 : (49,0...53,0)
Spread cm³ : 2,5
1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 46...54

Testing:
1st rack travel in: 15,00
Speed rpm : 1240...1250
3rd rack travel in: 4,40...7,00
Speed rpm : 1340

4th rack travel in: 1500
Speed rpm : 0,30...1,50

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 5,70...6,30
Rack travel in mm : 2,30
Speed rpm : 480...520
Speed rpm : 650
Maximum rack trave: 1,50

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1180
Rack travel in m: -
2nd speed rpm : 500
Rack travel in m: -
3rd speed rpm : 400
Rack travel in m: +(1,2...1,8)

BREAKAWAY

1st version
Speed rpm : 1210...1230

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 9,0

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5,90...6,10

Remarks:

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MM 2,6 A 1
Edition : 29.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 400 083 423

Injection pump
Pump designation : PES3A800320/3RS1264
Governor
Governor design. : RSV350...900A7B627R

Customer-spec. information
Customer : MM

Engine : D-225-3

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Prestroke mm : 2,20...2,30
: (2,15...2,35)

Rack travel in mm : 10,50

Firing order : 1-2-3

Phasing : 0-120-240
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9,00...9,10

Del. quantity cm³/ : 4,35...4,55

100 s: (4,15...4,75)

Spread cm³ : 0,25

100 s: (0,40)

2nd speed rpm : 1000

Rack travel in mm : 14,90...15,10

Del. quantity cm³/ : 10,65...11,15

100 s: (10,45...11,35)

Spread cm³ : 0,25

100 s: (0,40)

3rd speed rpm : 200

Rack travel in mm : 8,90...9,10

Del. quantity cm³/ : 2,95...3,75

100 s: (2,8...3,9)

Spread cm³ : 0,20

100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0,3...1,0

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 880

Del. quantity : 51,5...52,5

1000 : (50,0...54,0)

Spread cm³ : 2,0

1000 : (3,5)

RATED SPEED

1st version

Control lever

position degrees: 52...60

Testing:

1st rack travel in: 15,00

Speed rpm : 940...950

3rd rack travel in: 4,40...7,20

Speed rpm : 960

4th rack travel in: 1050
Speed rpm : 0,30...1,50

LOW IDLE 1

Control lever
position degrees: 21...29
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 5,70...6,30
Rack travel in mm : 2,80
Speed rpm : 430...470
Speed rpm : 550
Maximum rack trave: 1,50

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 880
Rack travel in m: -
2nd speed rpm : 500
Rack travel in m: -
3rd speed rpm : 400
Rack travel in m: +(1,20...1,80)

BREAKAWAY

1st version
Speed rpm : 900...920

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 9,0

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5,90...6,10

Remarks:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 3,4 B
 Edition : 29.02.88
 Replaces : -
 Test oil : ISO 4113
 Combination no. : 9 400 083 426
 Injection pump
 Pump designation : PES4A80D320/3RS1265
 Governor
 Governor design. : RSV350...1200A2B627R

Customer-spec. information
 Customer : MWM

Engine : D 225-4

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,20...2,30
 : (2,15...2,35)
 Rack travel in mm : 10,50
 Firing order : 1-3-4-2

Phasing : 0-90-180-270
 Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
 & maximum rack tra: 21,00
 Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 9,00...9,10
 Del. quantity cm³/ : 4,35...4,55
 100 s: (4,15...4,75)
 Spread cm³ : 0,25
 100 s: (0,40)

2nd speed rpm : 1000
 Rack travel in mm : 14,90...15,10
 Del. quantity cm³/ : 10,65...11,15
 100 s: (10,35...11,45)
 Spread cm³ : 0,35
 100 s: (0,45)
 3rd speed rpm : 200
 Rack travel in mm : 8,90...9,10
 Del. quantity cm³/ : 2,95...3,75
 100 s: (2,7...4,0)
 Spread cm³ : 0,20
 100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0,3...1,0

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1180
 Del. quantity : 50,5...51,5
 1000 : (49,0...53,0)
 Spread cm³ : 2,5
 1000 : (4,0)

RATED SPEED

1st version
 Control lever
 position degrees: 46...54

Testing:
 1st rack travel in: 16,00
 Speed rpm : 1240...1250
 3rd rack travel in: 4,40...7,00
 Speed rpm : 1340

4th rack travel in: 1500
Speed rpm : 0,30...1,50

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 5,7...6,3
Rack travel in mm : 2,3
Speed rpm : 480...520
Speed rpm : 650
Maximum rack trave: 1,5

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1180
Rack travel in m: -
2nd speed rpm : 500
Rack travel in m: -
3rd speed rpm : 400
Rack travel in m: +(1,20...1,80)

BREAKAWAY

1st version
Speed rpm : 1210...1230

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 9,00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5,90...6,10

Remarks:

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MM 3,4 B 1
 Edition : 01.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 400 083 427
 Injection pump
 Pump designation : PES4A80D320/3RS1265
 Governor
 Governor design. : RSV350...900A7B627R

Customer-spec. information
 Customer : MM

Engine : D-225-4

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values ____

BEGINNING OF DELIVERY

Prestroke mm : 2,20...2,30
 : (2,15...2,35)
 Rack travel in mm : 10,50
 Firing order : 1-3-4-2

Phasing : 0-90-180-270
 Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
 & maximum rack tra: 21,00
 Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 9,00...9,10
 Del. quantity cm³/ : 4,35...4,55
 100 s: (4,15...4,75)
 Spread cm³ : 0,25
 100 s: (0,40)
 2nd speed rpm : 1000
 Rack travel in mm : 14,90...15,10
 Del. quantity cm³/ : 10,65...11,15
 100 s: (10,35...11,45)
 Spread cm³ : 0,35
 100 s: (0,45)
 3rd speed rpm : 200
 Rack travel in mm : 8,90...9,10
 Del. quantity cm³/ : 2,95...3,75
 100 s: (2,7...4,0)
 Spread cm³ : 0,20
 100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0,3...1,0

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 880
 Del. quantity : 51,5...52,5
 1000 : (49,0...53,0)
 Spread cm³ : 2,5
 1000 : (4,0)

RATED SPEED

1st version
 Control lever
 position degrees: 52...60

Testing:
 1st rack travel in: 16,00
 Speed rpm : 940...950
 3rd rack travel in: 960
 Speed rpm : 4,40...7,20

4th rack travel in: 1050
Speed rpm : 0,30...1,50

LOW IDLE 1

Control lever
position degrees: 21...29
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 5,70...6,30
Rack travel in mm : 2,80
Speed rpm : 430...470
Speed rpm : 550
Maximum rack trave: 1,50

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 880
Rack travel in m: -
2nd speed rpm : 500
Rack travel in m: -
3rd speed rpm : 450
Rack travel in m: +(1,20...1,80)

BREAKAWAY

1st version
Speed rpm : 900...920

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 9,00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5,90...6,10

Remarks:

APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 5,1 A
Edition : 01.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 400 083 429

Injection pump
Pump designation : PES6A80D320/3RS1261
Governor
Governor design. : RSV350...900A7B627R

Customer-spec. information
Customer : MWM

Engine : D-225-6

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,20...2,30
: (2,15...2,35)
Rack travel in mm : 10,50
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

H02

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9,00

Del. quantity cm³/ : 4,35...4,55

100 s : (4,15...4,75)

Spread cm³ : 0,25

100 s : (0,40)

2nd speed rpm : 1000
Rack travel in mm : 14,90...15,10
Del. quantity cm³/ : 10,65...11,15

100 s : (10,35...11,45)

Spread cm³ : 0,35

100 s : (0,45)

3rd speed rpm : 200
Rack travel in mm : 8,90...9,10
Del. quantity cm³/ : 2,95...3,75

100 s : (2,7...4,0)

Spread cm³ : 0,20

100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 880
Del. quantity : 51,5...52,5

1000 : (49,0...53,0)

Spread cm³ : 2,5

1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 52...60

Testing:
1st rack travel in: 16,00
Speed rpm : 940...950
3rd rack travel in: 4,40...7,20
Speed rpm : 960

4th rack travel in: 1050
Speed rpm : 0,30...1,50

LOW IDLE 1

Control lever
position degrees: 21...29
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 5,70...6,30
Rack travel in mm : 2,80
Speed rpm : 450
Speed rpm : 550
Maximum rack trave: 1,50

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 880
Rack travel in m: -
2nd speed rpm : 500
Rack travel in m: -
3rd speed rpm : 450
Rack travel in m: +(1,20...1,80)

BREAKAWAY

1st version
Speed rpm : 900...920

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 9,00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5,90...6,10

Remarks:

APPLICATION

Governor setting according to
VDT-I-420/112.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 5,1 A 1
Edition : 01.03.88
Replaces : -
Test oil : ISO-4113
Combination no. : 9 400 083 430
Injection pump
Pump designation : PES6A80D320/3RS1261
Governor
Governor design. : RSV350...1200A2B627R

Customer-spec. information
Customer : MWM

Engine : D 225-6

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _ _ _

BEGINNING OF DELIVERY

Prestroke mm : 2,20...2,30
 : (2,15...2,35)
Rack travel in mm : 10,50
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1000
Rack travel in mm : 9,00...9,10
Del. quantity cm³/ : 4,35...4,55
 100 s : (4,15...4,75)
Spread cm³ : 0,25
 100 s : (0,40)
2nd speed rpm : 1000
Rack travel in mm : 14,90...15,10
Del. quantity cm³/ : 10,65...11,15
 100 s : (10,35...11,45)
Spread cm³ : 0,35
 100 s : (0,45)
3rd speed rpm : 200
Rack travel in mm : 8,90...9,10
Del. quantity cm³/ : 2,95...3,75
 100 s : (2,7...4,0)
Spread cm³ : 0,20
 100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1180
Del. quantity : 50,50...51,50
 1000 : (48,50...53,50)
Spread cm³ : 2,5
 1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 46...54

Testing:
1st rack travel in: 16,00
Speed rpm : 1240...1250
3rd rack travel in: 4,40...7,00
Speed rpm : 1340

4th rack travel in: 1500
Speed rpm : 0,30...1,50

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 5,70...6,30
Rack travel in mm : 2,30
Speed rpm : 480...520
Speed rpm : 650
Maximum rack trave: 1,50

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1180
Rack travel in m: -
2nd speed rpm : 500
Rack travel in m: -
3rd speed rpm : 400
Rack travel in m: +(1,20...1,80)

BREAKAWAY

1st version
Speed rpm : 1210...1230

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 9,00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5,90...6,10

Remarks:

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 N 15
 Edition : 02.03.88
 Replaces : -
 Test oil : ISO 4113
 Combination no. : 9 400 084 239
 Injection pump
 Pump designation : PES6A90D41ORS2239
 Governor
 Governor design. : RQV300...1425AB758L

Customer-spec. information
 Customer : DAIMLER-BENZ-BRAS.

Engine : OM 352

1st version kW : 95.70
 Rated speed : 1850

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
 : (2,10...2,30)
 Rack travel in mm : 9,00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0,50 (0,75)

H06

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 9,00...9,10
 Del. quantity cm³/ : 4,5...5,0
 100 s : (4,3...5,2)
 Spread cm³ : 0,3
 100 s : (0,5)
 2nd speed rpm : 1000
 Rack travel in mm : 11,90...12,10
 Del. quantity cm³/ : 7,3...8,2
 100 s : (7,0...8,5)
 Spread cm³ : 0,4
 100 s : (0,55)
 3rd speed rpm : 200
 Rack travel in mm : 8,90...9,10
 Del. quantity cm³/ : 2,05...2,85
 100 s : (1,7...3,2)
 Spread cm³ : 0,25
 100 s : (0,45)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1400
 Del. quantity : 61,0...63,0
 1000 : (59,5...64,5)
 Spread cm³ : 3,0
 1000 : (5,0)

RATED SPEED

1st version
 Control lever
 position degrees: 62...70

Testing:
 1st rack travel in: 17,70
 Speed rpm : 1425
 2nd rack travel in: 16,70
 Speed rpm : 1465...1475
 3rd rack travel in: 1,50...1,80
 Speed rpm : 1650
 4th rack travel in: 1780
 Speed rpm : 0,00...1,00

LOW IDLE 1
 Control lever
 position degrees: 6...14

Testing:
 Speed rpm : 100
 Minimum rack travel: 6,60

Speed rpm : 250
Rack travel in mm : 5,50...7,00
Rack travel in mm : 5,00
Speed rpm : 330...370
Speed rpm : 770
Maximum rack travel: 1,00

START CUT-OUT

Speed 1/min : 220

BREAKAWAY

1st version
Speed rpm : 1425...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 13,70...14,30

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,9 I 9
 Edition : 01.03.88
 Replaces : -
 Test oil : ISO 4113
 Combination no. : 9 400 084 241
 Injection pump
 Pump designation : PES6A80D410RS2085Y
 Governor
 Governor design. : RSV575...1100A1B629D
 L

Customer-spec. information
 Customer : DAIMLER-BENZ-BRAS.

Engine : OM 352

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values ----

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
 : (2,10...2,30)
 Rack travel in mm : 9,00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

H08

1st speed rpm : 1000

Rack travel in mm : 9,00...9,10

Del. quantity cm³/ : 4,35...4,85

100 s : (4,15...5,05)

Spread cm³ : 0,40

100 s : (-)

2nd speed rpm : 1000

Rack travel in mm : 14,90...15,10

Del. quantity cm³/ : 10,25...11,65

100 s : (9,95...11,95)

Spread cm³ : 0,35

100 s : (0,45)

3rd speed rpm : 200

Rack travel in mm : 8,90...9,10

Del. quantity cm³/ : 2,45...3,45

100 s : (2,2...3,7)

Spread cm³ : 0,20

100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0,3...1,0

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1080

Del. quantity : 53,5...54,5

1000 : (52,0...56,0)

Spread cm³ : 2,5

1000 : (4,0)

RATED SPEED

1st version

Control lever

position degrees: 53...61

Testing:

1st rack travel in: 16,00

Speed rpm : 1140...1150

3rd rack travel in: 4,20...7,40

Speed rpm : 1190

4th rack travel in: 1340

Speed rpm : 0,30...1,00

LOW IDLE 1

Control lever

position degrees: 28...36
Setting point w/out bumper spring
Speed rpm : 575
Rack travel in mm : 7,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 575
Rack travel in mm : 6,70...7,30
Rack travel in mm : 4,00
Speed rpm : 650
Speed rpm : 800
Maximum rack trave: 1,0

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1080
Rack travel in m: -
2nd speed rpm : 900
Rack travel in m: +(0,10...0,30)
3rd speed rpm : 650
Rack travel in m: +(0,30...0,50)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 53,0...55,0
1000 s: (51,0...57,0)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 48,5...50,5
1000 s: (46,5...52,5)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version
Speed rpm : 1110...1130

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 14,20...14,80

LOW IDLE

Speed rpm : 575
Rack travel in mm : 6,90...7,10

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 I 10
Edition : 01.03.88
Replaces : -
Test oil : ISO 4113

Combination no. : 9 400 084 244

Injection pump
Pump designation : PES6A80D41ORS2085Y
Governor
Governor design. : RSV350...900A7B638L

Customer-spec. information
Customer : DAIMLER-BENZ-BRAS.

Engine : OM 352

1st version kW : 63
Rated speed : 1800

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values ____

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
 : (2,10...2,30)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

H10

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 9,60...9,70

Del. quantity cm³/ : 5,10...5,20

100 s : (4,90...5,40)

Spread cm³ : 0,25

100 s : (0,40)

2nd speed rpm : 350
Rack travel in mm : 7,40...7,60
Del. quantity cm³/ : 1,65...1,95
100 s : (1,35...2,25)
Spread cm³ : 0,20
100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : 6,0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Del. quantity : 51,0...52,0
1000 : (49,5...53,5)
Spread cm³ : 2,0
1000 : (3,5)

RATED SPEED

1st version
Control lever
position degrees: 56...64

Testing:
1st rack travel in: 8,60
Speed rpm : 940...950
2nd rack travel in: 4,00
Speed rpm : 960...990
3rd rack travel in: 0,30...1,70
Speed rpm : 1050

LOW IDLE 1

Control lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 7,00

Speed rpm : 350
Rack travel in mm : 7,40...7,60
Rack travel in mm : 2,00
Speed rpm : 420...480
Speed rpm : 550
Maximum rack travel : 1,0

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 900
Rack travel in m: 9,60...9,70
2nd speed rpm : 500
Rack travel in m: 9,60...9,70
3rd speed rpm : 400
Rack travel in m: 10,80...11,40

BREAKAWAY

1st version
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 73,0...83,0

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6,90...7,10

Remarks:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 I 11
Edition : 01.03.88
Replaces : -
Test oil : ISO 4113

Combination no. : 9 400 084 245

Injection pump
Pump designation : PES6A80D410RS2085Y
Governor
Governor design. : RSV550...1125A1B638L

Customer-spec. information
Customer : DAIMLER-BENZ-BRAS.

Engine : OM 352

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
(2,10...2,30)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

H12

1st speed rpm : 1000

Rack travel in mm : 9,00...9,10

Del. quantity cm³/ : 4,35...4,85

100 s : (4,15...5,05)

Spread cm³ : 0,30

100 s : (-)

2nd speed rpm : 1000

Rack travel in mm : 14,90...15,10

Del. quantity cm³/ : 10,25...11,65

100 s : (9,95...11,95)

Spread cm³ : 0,35

100 s : (0,45)

3rd speed rpm : 200

Rack travel in mm : 8,90...9,10

Del. quantity cm³/ : 2,45...3,45

100 s : (2,2...3,7)

Spread cm³ : 0,2

100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0,3...1,0

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 48,5...49,5

1000 : (47,0...51,0)

Spread cm³ : 2,5

1000 : (4,0)

RATED SPEED

1st version

Control lever

position degrees: 53...61

Testing:

1st rack travel in: 16,00

Speed rpm : 1140...1150

3rd rack travel in: 4,40...6,20

Speed rpm : 1180

4th rack travel in: 1300

Speed rpm : 0,00...1,00

LOW IDLE 1

Control lever

position degrees: 26...34

Setting point w/out bumper spring

Speed rpm : 550

Rack travel in mm : 7,50

Testing:

Speed rpm : 100

Minimum rack trave: 19,00

Speed rpm : 550

Rack travel in mm : 7,20...7,80

Rack travel in mm : 4,40

Speed rpm : 600

Speed rpm : 720

Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: -

2nd speed rpm : 850

Rack travel in m: -

3rd speed rpm : 650

Rack travel in m: +(1,20...1,80)

BREAKAWAY

1st version

Speed rpm : 1130...1150

STARTING FUEL DELIVERY

Speed rpm : 100

Rack travel in mm : 14,20...14,80

LOW IDLE

Speed rpm : 550

Rack travel in mm : 7,40...7,60

Remarks:

APPLICATION

Compressor

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 M 8
Edition : 01.03.88
Replaces : -
Test oil : ISO 4113

Combination no. : 9 400 084 250

Injection pump
Pump designation : PES6A80D410RS2085Y
Governor
Governor design. : RSV350...1000A1B1047
DL

Customer-spec. information
Customer : DAIMLER-BENZ-BRAS.

Engine : OM-352

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
: (2,10...2,30)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

H14

1st speed rpm : 1000
Rack travel in mm : 9,00...9,10
Del. quantity cm³/ : 4,35...4,85
100 s : (4,15...5,05)
Spread cm³ : 0,3
100 s : (-)

2nd speed rpm : 1000
Rack travel in mm : 14,90...15,10
Del. quantity cm³/ : 11,25...11,85
100 s : (10,95...12,15)
Spread cm³ : 0,35
100 s : (0,45)
3rd speed rpm : 200
Rack travel in mm : 8,90...9,10
Del. quantity cm³/ : 2,45...3,45
100 s : (2,2...3,7)
Spread cm³ : 0,20
100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 980
Del. quantity : 56,0...57,0
1000 : (54,5...58,5)
Spread cm³ : 2,5
1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 16,00
Speed rpm : 1040...1050
3rd rack travel in: 3,80...6,00
Speed rpm : 1180
4th rack travel in: 1230
Speed rpm : 0,00...1,00

LOW IDLE 1

Control lever

position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 7,50

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 7,40...7,60
Rack travel in mm : 2,50
Speed rpm : 530...570
Speed rpm : 650
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: -
2nd speed rpm : 800
Rack travel in m: +(0,30...0,50)
3rd speed rpm : 500
Rack travel in m: +(0,70...0,90)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 57,0...59,0
1000 s: (55,0...61,0)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 57,5...59,5
1000 s: (55,5...61,5)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version
Speed rpm : 1010...1030

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 14,2...14,8

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 3,8 I 3
 Edition : 01.03.88
 Replaces : -
 Test oil : ISO 4113

Combination no. : 9 400 084 260

Injection pump
 Pump designation : PES4A80D410RS2094Z
 Governor
 Governor design. : RSV350...1000A1B1047
 DL

Customer-spec. information
 Customer : DAIMLER-BENZ-BRAS.

Engine : OM 314

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values ____

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
 : (2,10...2,30)
 Rack travel in mm : 9,00
 Firing order : 1-3-4-2

Phasing : 0-90-180-270
 Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

H16

1st speed rpm : 1000

Rack travel in mm : 9,00...9,10

Del. quantity cm³/ : 4,35...4,85

100 s : (4,15...5,05)

Spread cm³ : 0,40

100 s : (-)

2nd speed rpm : 1000

Rack travel in mm : 14,90...15,10

Del. quantity cm³/ : 10,25...11,65

100 s : (9,95...11,95)

Spread cm³ : 0,35

100 s : (0,45)

3rd speed rpm : 200

Rack travel in mm : 8,90...9,10

Del. quantity cm³/ : 2,45...3,45

100 s : (2,2...3,7)

Spread cm³ : 0,2

100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0,3...1,0

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Del. quantity : 46,5...47,5

1000 : (45,0...49,0)

Spread cm³ : 2,5

1000 : (4,0)

RATED SPEED

1st version

Control lever

position degrees: 51...59

Testing:

1st rack travel in: 16,00

Speed rpm : 1040...1050

3rd rack travel in: 3,80...6,00

Speed rpm : 1120

4th rack travel in: 1230

Speed rpm : 0,00...1,00

LOW IDLE 1

Control lever

position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 7,50

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 7,40...7,60
Rack travel in mm : 2,50
Speed rpm : 550
Speed rpm : 650
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: -
2nd speed rpm : 800
Rack travel in m: +(0,30...0,50)
3rd speed rpm : 500
Rack travel in m: +(0,80...1,00)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 46,0...48,0
1000 s: (44,0...50,0)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 46,0...48,0
1000 s: (44,0...50,0)

BREAKAWAY

1st version
Speed rpm : 1010...1030

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 14,20...14,80

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 I 13
Edition : 03.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 400 084 299

Injection pump
Pump designation : PES6A80D410RS2085Y
Governor
Governor design. : RSV350...1100A1B735D
L

Customer-spec. information
Customer : DAIMLER-BENZ-BRAS.

Engine : OM 352

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
: (2,10...2,30)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 1-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

H18

1st speed rpm : 1000
Rack travel in mm : 9,00...9,10
Del. quantity cm³/ : 4,35...4,85
100 s : (4,15...5,05)
Spread cm³ : 0,25
100 s : (0,40)

2nd speed rpm : 1000
Rack travel in mm : 14,90...15,10
Del. quantity cm³/ : 10,25...11,65
100 s : (9,95...11,95)
Spread cm³ : 0,35
100 s : (0,45)
3rd speed rpm : 200
Rack travel in mm : 8,90...9,10
Del. quantity cm³/ : 2,45...3,45
100 s : (2,2...3,7)
Spread cm³ : 0,2
100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1080
Del. quantity : 56,0...57,0
1000 : (54,5...58,5)
Spread cm³ : 2,5
1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 16,00
Speed rpm : 1040...1050
3rd rack travel in: 3,30...5,40
Speed rpm : 1210
4th rack travel in: 1310
Speed rpm : 0,00...1,00

LOW IDLE 1
Control lever

position degrees: 19...27
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 7,50

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 7,30...7,70
Rack travel in mm : 3,10
Speed rpm : 530...570
Speed rpm : 660
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: -
2nd speed rpm : 1000
Rack travel in m: -
3rd speed rpm : 800
Rack travel in m: +(0,40...0,60)
4th speed rpm : 500
Rack travel in m: +(0,80...1,40)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 55,0...57,0
1000 s: (53,0...59,0)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 54,0...56,0
1000 s: (52,0...58,0)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version

Speed rpm : 1105...1130

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 14,20...14,80

LOW IDLE

Speed rpm : 350
Rack travel in mm : 7,40...7,60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 m
Edition : 07.86
Replaces : -
Test oil : ISO-4113
Combination no. : 9 400 230 022
Injection pump
Pump designation : PES6A100D41ORS3032
Governor
Governor design. : RSV400...1100A2B2086

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466T

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 413 385 007

Inlet press., bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 9 681 230 706

Outside diameter
x Wall thickness
x Length mm : 6,00X2,00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Prestroke mm : 1,95...2,05
: (1,90...2,10)
Rack travel in mm : 21,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

H20

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100
Rack travel in mm : 11,45
Del. quantity cm3/ : 10,9...11,1
Spread cm3 : 0,3
2nd speed rpm : 400
Rack travel in mm : 6,80
Del. quantity cm3/ : 1,3...1,7
Spread cm3 : 0,4

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Aneroid pressure h: 1200
Del. quantity : 109,0...111,0

RATED SPEED

1st version
Control lever
position degrees: 35...43

Testing:
1st rack travel in: 10,45
Speed rpm : 1145...1155
2nd rack travel in: 4,00
Speed rpm : 1195...1225
4th rack travel in: 1250
Speed rpm : 0,30...1,70

LOW IDLE 1

Control lever
position degrees: 14...20
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 6,30

Testing:
Speed rpm : 100
Minimum rack travel: 19,00
Speed rpm : 400
Rack travel in mm : 6,80

Rack travel in mm : 2,00
Speed rpm : 460...520
Speed rpm : 600
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1100
Rack travel in m: 11,40...11,50
2nd speed rpm : 1000
Rack travel in m: 11,35...11,65
3rd speed rpm : 750
Rack travel in m: 12,75...12,95

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 420
Contr.-rod trav.mm: 12,75...12,85

Measurement

Speed 1/min : 500

1st pressure hPa : 200
Rack travel in m: 11,10...11,50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 650
Del.quantity cm3/ : 126,0...129,0
Speed rpm : 500
Del.quantity cm3/ : 78,5...81,5

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 N 20
 Edition : 03.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 407 083 211
 Injection pump
 Pump designation : PES6A90D410RS2293
 Governor
 Governor design. : RSV350...1050A1B1086
 DL

Customer-spec. information
 Customer : DAIMLER-BENZ-BRAS.

Engine : OM 352 A

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values ____

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
 : (2,10...2,30)

Rack travel in mm : 9,00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

H22

1st speed rpm : 1000

Rack travel in mm : 9,00...9,10

Del. quantity cm³/ : 4,5...5,0

100 s : (4,3...5,2)

Spread cm³ : 0,25

100 s : (0,40)

2nd speed rpm : 1000

Rack travel in mm : 11,90...12,10

Del. quantity cm³/ : 7,3...8,2

100 s : (7,0...8,5)

Spread cm³ : 0,35

100 s : (0,45)

3rd speed rpm : 200

Rack travel in mm : 8,90...9,10

Del. quantity cm³/ : 2,05...2,85

100 s : (1,8...3,1)

Spread cm³ : 0,2

100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0,3...1,0

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Del. quantity : 44,0...45,0

1000 : (42,0...47,0)

Spread cm³ : 2,5

1000 : (4,0)

RATED SPEED

1st version

Control lever

position degrees: 58...66

Testing:

1st rack travel in: 16,00

Speed rpm : 1150

3rd rack travel in: 3,20...6,00

Speed rpm : 1190

4th rack travel in: 1340

Speed rpm : 0,00...1,00

LOW IDLE 1

Control lever

position degrees: 25...33
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 7,50

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 7,30...7,70
Rack travel in mm : 2,80
Speed rpm : 600
Speed rpm : 720
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1030
Rack travel in m: -
2nd speed rpm : 800
Rack travel in m: +(1,20...1,40)
3rd speed rpm : 500
Rack travel in m: +(2,30...2,70)
4th speed rpm : 400
Rack travel in m: +(2,30...2,80)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 50,5...52,5
1000 s: (48,0...55,0)
Spread cm3 : 4,0
1000 s: (5,5)
Speed rpm : 500
Del.quantity cm3/ : 57,0...59,0
1000 s: (54,5...61,5)
Spread cm3 : 4,0
1000 s: (5,5)

BREAKAWAY

1st version

Speed rpm : 1060...1080

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 13,70...14,30

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 8,1 A
Edition : 03.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 233

Injection pump
Pump designation : PES6A90D41ORS2482
Governor
Governor design. : RQ275/1200AB1027DL

Customer-spec. information
Customer : FDB

Engine : 8360

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
: (2,10...2,30)

Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 12,60...12,70

Del. quantity cm³/ : 7,15...7,35

100 s : (6,90...7,60)

Spread cm³ : 0,3

100 s : (0,5)

2nd speed rpm : 275

Rack travel in mm : 8,30...8,50

Del. quantity cm³/ : 0,5...0,9

100 s : (0,2...0,6)

Spread cm³ : 0,25

100 s : (0,45)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 900

Rack travel in mm : 14,20...15,00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del. quantity : 71,5...73,5

1000 : (69,5...74,5)

Spread cm³ : 3,0

1000 : (5,0)

RATED SPEED

1st version

Setting point:

Speed rpm : 900

Rack travel in mm : 14,6

Testing:

1st rack travel in: 11,60

Speed rpm : 1245...1260

2nd rack travel in: 4,00

Speed rpm : 1350...1380

3rd rack travel in: 0,00...1,00

Speed rpm : 1500

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 275

Rack travel in mm : 5,80

Testing:

Speed rpm : 100

Minimum rack travel: 7,30

Speed rpm : 275

Rack travel in mm : 5,70...5,90

Rack travel in mm : 2,00
Speed rpm : 420...480
Speed rpm : 600
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200
Rack travel in m: 12,60...12,70
2nd speed rpm : 700
Rack travel in m: 13,10...13,40
3rd speed rpm : 500
Rack travel in m: 13,45...13,55

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 68,0...70,0
1000 s: (65,5...72,5)
Spread cm3 : 4,0
1000 s: (5,5)
Speed rpm : 500
Del.quantity cm3/ : 65,5...67,5
1000 s: (63,0...70,0)
Spread cm3 : 4,0
1000 s: (5,5)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11,60
Speed rpm : 1245...1260

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100,0...110,0
1000 s: (97,0...113,0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 4,6 C
Edition : 03.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 234

Injection pump
Pump designation : PES4A90D410RS2548
Governor
Governor design. : RQ300/1200AB1028L

Customer-spec. information
Customer : FDB

Engine : 8340

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
: (2,10...2,30)

Rack travel in mm : 9,00
Firing order : 1-3-4-2

Phasing : 0-90-180-270
Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 10,85...10,95

Del. quantity cm³/ : 6,5...6,6

100 s : (6,25...6,85)

Spread cm³ : 0,30

100 s : (0,50)

2nd speed rpm : 300

Rack travel in mm : 7,90...8,10

Del. quantity cm³/ : 0,70...1,10

100 s : (0,30...0,70)

Spread cm³ : 0,25

100 s : (0,45)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15,60...16,40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del. quantity : 65,0...66,0

1000 : (63,0...67,0)

Spread cm³ : 3,0

1000 : (5,0)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16,0

Testing:

1st rack travel in: 9,90

Speed rpm : 1245...1260

2nd rack travel in: 4,00

Speed rpm : 1365...1395

3rd rack travel in: 0,00...1,00

Speed rpm : 1500

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 6,00

Testing:

Speed rpm : 100

Minimum rack trave: 7,50

Speed rpm : 300

Rack travel in mm : 5,90...6,10

Rack travel in mm : 2,00
Speed rpm : 450...490
Speed rpm : 600
Maximum rack travel: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200
Rack travel in m: 10,85...10,95
2nd speed rpm : 710
Rack travel in m: 11,30...11,60
3rd speed rpm : 630
Rack travel in m: 11,75...11,85

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 900
Del. quantity cm³/ : 59,0...61,0
1000 s: (56,5...63,5)
Spread cm³ : 4,0
1000 s: (3,5)
Speed rpm : 500
Del. quantity cm³/ : 63,0...65,0
1000 s: (60,5...67,5)
Spread cm³ : 5,5
1000 s: (4,0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9,90
Speed rpm : 1245...1260

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120,0...130,0
1000 s: (117,0...133,0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 I 12
 Edition : 03.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 407 083 244
 Injection pump
 Pump designation : PES6A800410RS2085Y
 Governor
 Governor design. : RSV350...1200A1B1125
 DL

Customer-spec. information
 Customer : DAIMLER-BENZ-BRAS.

Engine : OM 352

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
 : (2,10...2,30)

Rack travel in mm : 9,00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

H28

1st speed rpm : 1200

Rack travel in mm : 7,00...7,10

Del. quantity cm³/ : 3,35...3,45

100 s : (3,15...3,65)

Spread cm³ : 0,25

100 s : (0,40)

2nd speed rpm : 350

Rack travel in mm : 6,90...7,10

Del. quantity cm³/ : 1,45...1,75

100 s : (1,15...2,05)

Spread cm³ : 0,20

100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0,3...1,0

Governor spring pre-tension

Click setting x : 4,3

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del. quantity : 33,5...34,5

1000 : (32,0...36,0)

Spread cm³ : 2,5

1000 : (4,0)

RATED SPEED

1st version

Control lever

position degrees: 63...71

Testing:

1st rack travel in: 6,00

Speed rpm : 1240...1250

2nd rack travel in: 4,00

Speed rpm : 1255...1285

3rd rack travel in: 0,30...1,70

Speed rpm : 1400

LOW IDLE 1

Control lever

position degrees: 26...34

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 7,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 7,40...7,60
Rack travel in mm : 2,00
Speed rpm : 570...630
Speed rpm : 800
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200
Rack travel in m: 7,00...7,10
2nd speed rpm : 800
Rack travel in m: 7,40...7,70
3rd speed rpm : 500
Rack travel in m: 8,50...8,60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 31,5...33,5
1000 s: (29,5...35,5)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 33,5...35,5
1000 s: (31,5...37,5)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version

Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 83,0...93,0
Rack travel in mm : 14,20...14,80

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 3,9 B 7
Edition : 03.03.88
Replaces : -
Test oil : ISO-4113
Combination no. : 9 407 083 248
Injection pump
Pump designation : PES4A80D32ORS1282
Governor
Governor design. : RS350/1500A2B2073R

Customer-spec. information
Customer : MWM

Engine : D 229-4

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Prestroke mm : 2,2...2,3
: (2,15...2,35)
Rack travel in mm : 9,00
Firing order : 1-3-4-2

Phasing : 0-90-180-270
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,00
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1480
Rack travel in mm : 8,95...9,05
Del. quantity cm³/ : 5,55...5,65
100 s : (5,35...5,85)
Spread cm³ : 0,25
100 s : (0,4)
2nd speed rpm : 350
Rack travel in mm : 5,90...6,10
Del. quantity cm³/ : 0,55...0,85
100 s : (0,25...1,15)
Spread cm³ : 0,20
100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : 4,0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1480
Del. quantity : 55,5...56,5
1000 : (54,0...58,0)
Spread cm³ : 2,5
1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 55...63

Testing:
1st rack travel in: 8,00
Speed rpm : 1540...1550
2nd rack travel in: 4,00
Speed rpm : 1570...1600
3rd rack travel in: 0,30...1,70
Speed rpm : 1700

LOW IDLE 1

Control lever
position degrees: 30...38

Setting point w/out bumper spring

Speed rpm : 350
Rack travel in mm : 6,00
Speed rpm : 300
Rack travel in mm : 6,60...7,20
Rack travel in mm : 1350
Speed rpm : 2,1...2,6
Speed rpm : 1600
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1480
Rack travel in m: 8,95...9,05
2nd speed rpm : 1000
Rack travel in m: 9,20...9,40
3rd speed rpm : 800
Rack travel in m: 9,45...9,75
4th speed rpm : 500
Rack travel in m: 9,70...9,80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1000
Del.quantity cm3/ : 52,5...54,5
1000 s: (50,5...56,5)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 800
Del.quantity cm3/ : 51,0...53,0
1000 s: (49,0...55,0)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 48,0...50,0
1000 s: (46,0...52,0)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version

Speed rpm : 1540...1550

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00...21,00

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 3,8 I 5
 Edition : 03.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 407 083 253
 Injection pump
 Pump designation : PES4A80D410RS2094Z
 Governor
 Governor design. : RSV350...900A7B2076L

Customer-spec. information
 Customer : DAIMLER-BENZ-BRAS.

Engine : OM 314

1st version kW : 41
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
 : (2,10...2,30)
 Rack travel in mm : 9,00
 Firing order : 1-3-4-2

Phasing : 0-90-180-270
 Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

1st speed rpm : 900
 Rack travel in mm : 9,60...9,70
 Del. quantity cm³/ : 5,2...5,3
 100 s : (5,0...5,5)
 Spread cm³ : 0,25
 100 s : (0,40)
 2nd speed rpm : 350
 Rack travel in mm : 7,70...7,90
 Del. quantity cm³/ : 1,9...2,2
 100 s : (1,6...2,5)
 Spread cm³ : 0,20
 100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0,3...1,0

Governor spring pre-tension
 Click setting x : 6,0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 900
 Del. quantity : 52,0...53,0
 1000 : (50,5...54,5)
 Spread cm³ : 2,5
 1000 : (4,0)

RATED SPEED

1st version
 Control lever
 position degrees: 56...64

Testing:
 1st rack travel in: 8,60
 Speed rpm : 940...950
 2nd rack travel in: 4,00
 Speed rpm : 960...990
 3rd rack travel in: 0,30...1,70
 Speed rpm : 1050

LOW IDLE 1

Control lever
 position degrees: 24...32
 Setting point w/out bumper spring
 Speed rpm : 350
 Rack travel in mm : 6,00

Speed rpm : 350
Rack travel in mm : 7,70...7,90
Rack travel in mm : 2,00
Speed rpm : 430...490
Speed rpm : 550
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 900
Rack travel in m: 9,60...9,70
2nd speed rpm : 550
Rack travel in m: 9,60...9,70
3rd speed rpm : 400
Rack travel in m: 10,80...11,40

BREAKAWAY

1st version

Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 73,0...83,0

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6,90...7,10

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 3,8 I 4
Edition : 03.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 254

Injection pump
Pump designation : PES4A80D410RS2094Z
Governor
Governor design. : RSV550...1125A1B2076
L

Customer-spec. information
Customer : DAIMLER-BENZ-BRAS.

Engine : OM 314

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1,0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
: (2,10...2,30)

Rack travel in mm : 9,00
Firing order : 1-3-4-2

Phasing : 0-90-180-270

BASIC SETTING

J06

1st speed rpm : 1100

Rack travel in mm : 8,75...8,85

Del. quantity cm³/ : 4,85...5,05

100 s : (4,65...5,25)

Spread cm³ : 0,25

100 s : (0,40)

2nd speed rpm : 550

Rack travel in mm : 5,40...5,60

Del. quantity cm³/ : 0,55...0,85

100 s : (0,25...1,15)

Spread cm³ : 0,2

100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0,3...1,0

Governor spring pre-tension

Click setting x : 5,0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 48,5...50,5

1000 : (47,5...51,5)

Spread cm³ : 2,5

1000 : (4,0)

RATED SPEED

1st version

Control lever

position degrees: 53...61

Testing:

1st rack travel in: 7,80

Speed rpm : 1165...1175

2nd rack travel in: 4,00

Speed rpm : 1185...1215

3rd rack travel in: 0,30...1,70

Speed rpm : 1300

LOW IDLE 1

Control lever

position degrees: 28...36

Setting point w/out bumper spring

Speed rpm : 550

Rack travel in mm : 6,4...6,6

Testing:

Speed rpm : 100

Minimum rack trave: 19,00
Speed rpm : 550
Rack travel in mm : 7,40...7,60
Rack travel in mm : 2,00
Speed rpm : 620...680
Speed rpm : 800
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1100
Rack travel in m: 8,75...8,85
2nd speed rpm : 550
Rack travel in m: 8,75...8,95
3rd speed rpm : 400
Rack travel in m: 10,10...10,60

BREAKAWAY

1st version

Speed rpm : 1165...1175

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 73,0...83,0
Rack travel in mm : 14,20...14,80

LOW IDLE

Speed rpm : 550
Rack travel in mm : 6,40...6,60

Remarks:

APPLICATION

Compressor

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MM 4,1 D
Edition : 03.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 255

Injection pump
Pump designation : PES4A80D320RS1282
Governor
Governor design. : RSV350...1500A2B2077
R

Customer-spec. information
Customer : MM

Engine : D 226-4

1st version kW : 59
Rated speed : 3000

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,2...2,3
: (2,15...2,35)
Rack travel in mm : 9,00
Firing order : 1-3-4-2

Phasing : 0-90-120-180
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1500
Rack travel in mm : 9,55...9,65
Del. quantity cm³/ : 5,55...5,65
100 s: (5,35...5,85)
Spread cm³ : 0,20
100 s: (0,35)

2nd speed rpm : 350
Rack travel in mm : 6,90...7,10
Del. quantity cm³/ : 0,85...1,25
100 s: (0,55...1,55)
Spread cm³ : 0,2
100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : 5,2

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1500
Del. quantity : 55,5...56,5
1000 : (54,0...58,0)
Spread cm³ : 2,5
1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:
1st rack travel in: 8,60
Speed rpm : 1540...1550
2nd rack travel in: 4,00
Speed rpm : 1590...1620
3rd rack travel in: 0,30...1,70

Speed rpm : 1740

LOW IDLE 1

Control lever

position degrees: 19...27

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 5,50

Testing:

Speed rpm : 100

Minimum rack trave: 19,00

Speed rpm : 350

Rack travel in mm : 5,90...6,10

Rack travel in mm : 2,00

Speed rpm : 580...640

Speed rpm : 800

Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1500

Rack travel in m: 9,55...9,65

2nd speed rpm : 1000

Rack travel in m: 9,75...10,05

3rd speed rpm : 800

Rack travel in m: 10,05...10,25

4th speed rpm : 500

Rack travel in m: 10,30...10,40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1000

Del.quantity cm3/ : 53,5...55,5

1000 s: (53,0...56,0)

Spread cm3 : 3,5

1000 s: (4,5)

Speed rpm : 800

Del.quantity cm3/ : 51,5...53,5

1000 s: (51,0...54,0)

Spread cm3 : 3,5

1000 s: (4,5)

Speed rpm : 500

Del.quantity cm3/ : 48,0...50,0

1000 s: (47,5...50,5)

Spread cm3 : 3,5

1000 s: (4,5)

BREAKAWAY

1st version

Speed rpm : 1540...1550

STARTING FUEL DELIVERY

Speed rpm : 100

J09

Del.quantity cm3/ : 90,0...130,0

LOW IDLE

Speed rpm : 350

Rack travel in mm : 5,40...5,60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 5,9 I 1
Edition : 04.03.88
Replaces : -
Test oil : ISO-4113
Combination no. : 9 407 083 257
Injection pump
Pump designation : PES6A90D32ORS260S
Governor
Governor design. : RSV32S...1150A2B2097

Customer-spec. information
Customer : MWM

Engine : TD 229-6

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,20...2,30
: (2,15...2,35)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1130
Rack travel in mm : 8,80...8,90
Del. quantity cm³/ : 6,6...6,7
100 s: (6,35...6,95)
Spread cm³ : 0,3
100 s: (0,5)
2nd speed rpm : 325
Rack travel in mm : 6,40...6,60
Del. quantity cm³/ : 0,85...1,25
100 s: (0,45...1,65)
Spread cm³ : 0,25
100 s: (0,45)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : 3,2

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1130
Del. quantity : 66,0...67,0
1000 : (65,0...68,0)
Spread cm³ : 3,0
1000 : (5,0)

RATED SPEED

1st version
Control lever
position degrees: 40...48

Testing:
1st rack travel in: 7,80
Speed rpm : 1165...1175
2nd rack travel in: 4,00
Speed rpm : 1190...1220
3rd rack travel in: 0,30...1,70
Speed rpm : 1350

LOW IDLE 1

Control lever
position degrees: 18...26

Setting point w/out bumper spring

Speed rpm : 325

Rack travel in mm : 6,00

Testing:

Speed rpm : 100

Minimum rack trave: 19,00

Speed rpm : 325

Rack travel in mm : 6,40...6,60

Rack travel in mm : 2,00

Speed rpm : 590...650

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1130

Rack travel in m: 8,80...8,90

2nd speed rpm : 800

Rack travel in m: 9,70...10,00

3rd speed rpm : 500

Rack travel in m: 10,10...10,20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del.quantity cm3/ : 69,5...71,5

1000 s: (67,0...74,0)

Spread cm3 : 4,0

1000 s: (5,5)

Speed rpm : 500

Del.quantity cm3/ : 64,5...66,5

1000 s: (62,0...69,0)

Spread cm3 : 4,0

1000 s: (5,5)

BREAKAWAY

1st version

Speed rpm : 1165...1175

STARTING FUEL DELIVERY

Speed rpm : 100

Rack travel in mm : 19,00

LOW IDLE

Speed rpm : 325

Rack travel in mm : 5,90...6,10

Remarks:

: VALMET

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 5,9 I 2
Edition : 04.03.88
Replaces : -
Test oil : ISO-4113
Combination no. : 9 407 083 263
Injection pump
Pump designation : PES6A90D32ORS2605
Governor
Governor design. : RSV325...900A1B2132R

Customer-spec. information
Customer : MWM

Engine : TD 229-6

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Prestroke mm : 2,20...2,30
: (2,15...2,35)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 900
Rack travel in mm : 10,05...10,25
Del. quantity cm3/ : 7,3...7,4
100 s: (7,15...7,65)
Spread cm3 : 0,3
100 s: (0,5)
2nd speed rpm : 325
Rack travel in mm : 6,90...7,10
Del. quantity cm3/ : 1,35...1,75
100 s: (0,95...2,15)
Spread cm3 : 0,25
100 s: (0,45)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : 3,5

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Del. quantity : 73,0...74,0
1000 : (71,0...76,0)
Spread cm3 : 3,0
1000 : (5,0)

RATED SPEED

1st version
Control lever
position degrees: 40...48

Testing:
1st rack travel in: 9,20
Speed rpm : 920...930
2nd rack travel in: 4,00
Speed rpm : 950...970
3rd rack travel in: 0,30...1,70
Speed rpm : 1050

LOW IDLE 1

Control lever
position degrees: 18...26

Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6,40...6,60

Testing:

Speed rpm : 100
Minimum rack trave: 19,000
Speed rpm : 325
Rack travel in mm : 6,90...7,10
Rack travel in mm : 2,00
Speed rpm : 370...430
Speed rpm : 500
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 500
Rack travel in m: 10,15...10,35
2nd speed rpm : 375
Rack travel in m: 11,00...11,60

BREAKAWAY

1st version
Speed rpm : 920...930

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00

LOW IDLE

Speed rpm : 325
Rack travel in mm : 6,40...6,60

Remarks:

APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 N 19
Edition : 04.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 273

Injection pump
Pump designation : PES6A90D41ORS2293
Governor
Governor design. : RSV350...1250A2B2150
L

Customer-spec. information
Customer : DAIMLER-BENZ-BRAS.

Engine : OM 352

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
: (2,10...2,30)

Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 8,95...9,05

Del. quantity cm³/ : 5,1...5,2

100 s : (4,85...5,45)

Spread cm³ : 0,3

100 s : (0,5)

2nd speed rpm : 350

Rack travel in mm : 7,40...7,60

Del. quantity cm³/ : 1,3...1,7

100 s : (0,9...2,1)

Spread cm³ : 0,25

100 s : (0,45)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0,3...1,0

Governor spring pre-tension

Click setting x : 2,0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 51,0...52,0

1000 : (49,0...54,0)

Spread cm³ : 3,0

1000 : (5,0)

RATED SPEED

1st version

Control lever

position degrees: 37...45

Testing:

1st rack travel in: 8,00

Speed rpm : 1290...1300

2nd rack travel in: 4,00

Speed rpm : 1305...1335

3rd rack travel in: 0,30...1,70

Speed rpm : 1400

LOW IDLE 1

Control lever

position degrees: 13...21

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 7,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 7,40...7,60
Rack travel in mm : 2,00
Speed rpm : 610...670
Speed rpm : 750
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 8,95...9,05
2nd speed rpm : 900
Rack travel in m: 9,75...10,05
3rd speed rpm : 500
Rack travel in m: 10,55...10,65

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 900
Del.quantity cm3/ : 54,5...56,5
1000 s: (52,0...59,0)
Spread cm3 : 4,0
1000 s: (5,5)
Speed rpm : 500
Del.quantity cm3/ : 52...54
1000 s: (49,5...56,5)
Spread cm3 : 4,0
1000 s: (5,5)

BREAKAWAY

1st version

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 73,0...83,0

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6,90...7,10

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,9 A 11
Edition : 04.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 279

Injection pump
Pump designation : PES6A80D32ORS1271
Governor
Governor design. : RSV350...1400A2B2179
R

Customer-spec. information
Customer : MWM

Engine : D229-6

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00X2,00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,20...2,30
: (2,15...2,35)

Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1380
Rack travel in mm : 9,45...9,55
Del. quantity cm³/ : 5,25...5,35
100 s: (5,05...5,55)
Spread cm³ : 0,25
100 s: (0,4)
2nd speed rpm : 350
Rack travel in mm : 6,90...7,10
Del. quantity cm³/ : 0,75...1,05
100 s: (0,45...1,35)
Spread cm³ : 0,2
100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : 5,1

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1380
Del. quantity : 52,5...53,5
1000 : (51,0...55,0)
Spread cm³ : 2,5
1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 50...58

Testing:
1st rack travel in: 8,50
Speed rpm : 1420...1430
2nd rack travel in: 4,00
Speed rpm : 1470...1500
3rd rack travel in: 0,30...1,70
Speed rpm : 1650

LOW IDLE 1
Control lever

position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,50

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 6,90...7,10
Rack travel in mm : 2,00
Speed rpm : 640...700
Speed rpm : 850
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1380
Rack travel in m: 9,45...9,55
2nd speed rpm : 1100
Rack travel in m: 9,95...10,25
3rd speed rpm : 800
Rack travel in m: 10,70...10,90
4th speed rpm : 500
Rack travel in m: 10,90...11,00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100
Del.quantity cm3/ : 54,5...56,5
1000 s: (52,5...58,5)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 800
Del.quantity cm3/ : 54...56
1000 s: (52...58)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 52...54
1000 s: (50...56)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version

Speed rpm : 1420...1430

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00...21,00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6,40...6,60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 5,9 A12
 Edition : 04.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 407 083 280
 Injection pump
 Pump designation : PES6A800320RS1271
 Governor
 Governor design. : RSV350...1500A2B2180
 R

Customer-spec. information
 Customer : MWM

Engine : D 229-6

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Prestroke mm : 2,2...2,3
 : (2,15...2,35)
 Rack travel in mm : 9,00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
 & maximum rack tra: 21,00
 Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1480
 Rack travel in mm : 9,45...9,55
 Del. quantity cm³/ : 5,2...5,3
 100 s : (5,0...5,5)
 Spread cm³ : 0,25
 100 s : (0,4)
 2nd speed rpm : 350
 Rack travel in mm : 6,90...7,10
 Del. quantity cm³/ : 0,75...1,05
 100 s : (0,45...1,35)
 Spread cm³ : 0,35
 100 s : (0,45)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0,3...1,0

Governor spring pre-tension
 Click setting x : 5,0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1480
 Del. quantity : 52,0...53,0
 1000 : (50,5...54,5)
 Spread cm³ : 2,5
 1000 : (4,0)

RATED SPEED

1st version
 Control lever
 position degrees: 53...61

Testing:
 1st rack travel in: 8,50
 Speed rpm : 1520...1530
 2nd rack travel in: 4,00
 Speed rpm : 1570...1600
 3rd rack travel in: 0,30...1,70
 Speed rpm : 1750

LOW IDLE 1

Control lever

position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,50

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 6,90...7,10
Rack travel in mm : 2,00
Speed rpm : 640...700
Speed rpm : 850
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1480
Rack travel in m: 9,45...9,55
2nd speed rpm : 1100
Rack travel in m: 9,95...10,25
3rd speed rpm : 800
Rack travel in m: 10,70...10,90
4th speed rpm : 500
Rack travel in m: 10,90...11,00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100
Del.quantity cm3/ : 54,0...56,0
1000 s: (53,5...56,5)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 800
Del.quantity cm3/ : 53,5...55,5
1000 s: (53,0...56,0)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 51,5...53,5
1000 s: (51,0...54,0)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version

Speed rpm : 1520...1530

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00...21,00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6,40...6,60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 5,9 I
Edition : 04.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 282

Injection pump
Pump designation : PES6A90D32ORS2605
Governor
Governor design. : RSV325...1400A2B2096
R

Customer-spec. information
Customer : MWM

Engine : TD 229-6

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,2...2,3
: (2,15...2,35)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 8,00...8,10

Del. quantity cm³/ : 6,5...6,6

100 s : (6,25...6,85)

Spread cm³ : 0,3

100 s : (0,5)

2nd speed rpm : 325
Rack travel in mm : 6,40...6,60
Del. quantity cm³/ : 0,95...1,35

100 s : (0,55...1,75)

Spread cm³ : 0,25

100 s : (0,45)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : 3,5

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1400
Del. quantity : 65,0...66,0
1000 : (64,0...67,0)

Spread cm³ : 3,0
1000 : (5,0)

RATED SPEED

1st version
Control lever
position degrees: 52...60

Testing:
1st rack travel in: 7,00
Speed rpm : 1440...1450
2nd rack travel in: 4,00
Speed rpm : 1465...1495
3rd rack travel in: 0,30...1,70
Speed rpm : 1650

LOW IDLE 1
Control lever

position degrees: 19...27
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 325
Rack travel in mm : 6,40...6,60
Rack travel in mm : 2,00
Speed rpm : 620...680

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 8,00...8,10
2nd speed rpm : 1200
Rack travel in m: 8,00...8,20
3rd speed rpm : 800
Rack travel in m: 8,40...8,70
4th speed rpm : 500
Rack travel in m: 8,95...9,05

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 52...54
1000 s: (49,5...56,5)
Spread cm3 : 4,0
1000 s: (5,5)
Speed rpm : 500
Del.quantity cm3/ : 50,0...52,0
1000 s: (47,5...54,5)
Spread cm3 : 4,0
1000 s: (5,5)

BREAKAWAY

1st version

Speed rpm : 1440...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00

LOW IDLE

Speed rpm : 325
Rack travel in mm : 5,90...6,10

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 2,9 B
 Edition : 04.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 407 083 283
 Injection pump
 Pump designation : PES3A80D32ORS1281
 Governor
 Governor design. : RSV350...1150A2B2129
 -1R

Customer-spec. information
 Customer : MWM

Engine : D229-3

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values ____

BEGINNING OF DELIVERY

Prestroke mm : 2,2...2,3
 : (2,15...2,35)
 Rack travel in mm : 9,00
 Firing order : 1-2-3-

Phasing : 0-120-240
 Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
 & maximum rack tra: 21,00
 Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1150

 Rack travel in mm : 9,40...9,50

 Del. quantity cm³/ : 5,1...5,2

 100 s: (4,9...5,4)

 Spread cm³ : 0,25

 100 s: (0,4)

 2nd speed rpm : 350
 Rack travel in mm : 6,90...7,10
 Del. quantity cm³/ : 0,95...1,25
 100 s: (0,65...1,65)
 Spread cm³ : 0,2
 100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0,3...1,0

Governor spring pre-tension
 Click setting x : 4,35

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 51,0...52,0
 1000 : (49,5...53,5)
 Spread cm³ : 2,5
 1000 : (4,0)

RATED SPEED

1st version
 Control lever
 position degrees: 43...51

Testing:
 1st rack travel in: 8,40
 Speed rpm : 1190...1200
 2nd rack travel in: 4,00
 Speed rpm : 1235...1265
 3rd rack travel in: 0,30...1,70
 Speed rpm : 1400

LOW IDLE 1

Control lever

position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,50

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 6,90...7,10
Rack travel in mm : 2,00
Speed rpm : 670...710
Speed rpm : 800
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9,40...9,50
2nd speed rpm : 900
Rack travel in m: 10,00...10,30
3rd speed rpm : 500
Rack travel in m: 10,75...10,85

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 900
Del.quantity cm3/ : 53,0...55,0
1000 s: (51,0...57,0)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 52,5...54,5
1000 s: (50,5...56,5)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00...21,00

LOW IDLE

Speed rpm : 325
Rack travel in mm : 6,40...6,60

Remarks:

: VALMET

APPLICATION

J23

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 3,9 B 6
 Edition : 04.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 407 083 284
 Injection pump
 Pump designation : PES4AB0D320RS1282
 Governor
 Governor design. : RSV350...1150A2B2129
 -1R

Customer-spec. information
 Customer : MWM

Engine : D229-4

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values ____

BEGINNING OF DELIVERY

Prestroke mm : 2,2...2,3
 : (2,15...2,35)
 Rack travel in mm : 9,00
 Firing order : 1-3-4-2

Phasing : 0-90-180-270
 Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
 & maximum rack tra: 21,00
 Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 8,80...8,90
 Del. quantity cm³/ : 4,95...5,05
 100 s : (4,75...5,25)
 Spread cm³ : 0,25
 100 s : (0,4)
 2nd speed rpm : 350
 Rack travel in mm : 6,40...6,60
 Del. quantity cm³/ : 0,7...1,0
 100 s : (0,4...1,3)
 Spread cm³ : 0,2
 100 s : (0,35)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0,3...1,0

Governor spring pre-tension
 Click setting x : 4,3

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 49,5...50,5
 1000 : (48,0...52,0)
 Spread cm³ : 2,5
 1000 : (4,0)

RATED SPEED

1st version
 Control lever
 position degrees: 42...50

Testing:
 1st rack travel in: 7,90
 Speed rpm : 1170...1180
 2nd rack travel in: 4,00
 Speed rpm : 1210...1240
 3rd rack travel in: 0,30...1,70
 Speed rpm : 1400

LOW IDLE 1

Control lever

position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 6,40...6,60
Rack travel in mm : 2,00
Speed rpm : 640...700
Speed rpm : 800
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8,80...8,90
2nd speed rpm : 900
Rack travel in m: 9,75...10,05
3rd speed rpm : 500
Rack travel in m: 10,55...10,65

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 900
Del.quantity cm3/ : 53,0...55,0
1000 s: (51,0...57,0)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 53,5...55,5
1000 s: (51,5...57,5)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version

Speed rpm : 1170...1180

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00...21,00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5,90...6,10

Remarks:

: VALMET

APPLICATION

J25

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 5,9 A10
 Edition : 04.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 407 083 286
 Injection pump
 Pump designation : PES6A80D32ORS1271
 Governor
 Governor design. : RSV350...1500A2B2028
 -1R

Customer-spec. information
 Customer : MWM

Engine : D 229-6

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Prestroke mm : 2,2...2,3
 : (2,15...2,35)
 Rack travel in mm : 9,00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
 & maximum rack tra: 21,00
 Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1480
 Rack travel in mm : 9,20...9,30
 Del. quantity cm³/ : 4,95...5,05
 100 s: (4,75...5,25)
 Spread cm³ : 0,25
 100 s: (0,4)
 2nd speed rpm : 350
 Rack travel in mm : 6,90...7,10
 Del. quantity cm³/ : 0,75...1,05
 100 s: (0,45...1,35)
 Spread cm³ : 0,2
 100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0,3...1,0

Governor spring pre-tension
 Click setting x : 5,0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1480
 Del. quantity : 49,5...50,5
 1000 : (48,0...52,0)
 Spread cm³ : 2,5
 1000 : (4,0)

RATED SPEED

1st version
 Control lever
 position degrees: 56...64

Testing:
 1st rack travel in: 8,20
 Speed rpm : 1520...1530
 2nd rack travel in: 4,00
 Speed rpm : 1560...1590
 3rd rack travel in: 0,30...1,70
 Speed rpm : 1700

LOW IDLE 1

Control lever

position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,50

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 6,90...7,10
Rack travel in mm : 2,00
Speed rpm : 600...660
Speed rpm : 750
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1480
Rack travel in m: 9,20...9,30
2nd speed rpm : 1300
Rack travel in m: 9,40...9,60
3rd speed rpm : 1000
Rack travel in m: 10,20...10,50
4th speed rpm : 500
Rack travel in m: 10,80...10,90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm3/ : 51,5...53,5
1000 s: (49,5...55,5)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 1000
Del.quantity cm3/ : 55,5...57,5
1000 s: (53,5...59,5)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version
Speed rpm : 1520...1530

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00...21,00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6,40...6,60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 5,9 A 9
Edition : 04.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 287

Injection pump
Pump designation : PES6A800320RS1271
Governor
Governor design. : RSV350...1000A1B628-1R

Customer-spec. information
Customer : MWM

Engine : D 229-6

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values ____

BEGINNING OF DELIVERY

Prestroke mm : 2,2...2,3
: (2,15...2,35)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1025

Rack travel in mm : 9,00...9,10

Del. quantity cm³/ : 4,25...4,35

100 s: (4,05...4,55)

Spread cm³ : 0,25

100 s: (0,4)

2nd speed rpm : 350
Rack travel in mm : 6,90...7,10
Del. quantity cm³/ : 0,75...1,05

100 s: (0,45...1,35)

Spread cm³ : 0,2

100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : 3,5

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1025
Del. quantity : 42,5...43,5

1000 : (41,0...45,0)

Spread cm³ : 2,5

1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 52...60

Testing:
1st rack travel in: 8,00
Speed rpm : 1065...1075
2nd rack travel in: 4,00
Speed rpm : 1080...1110
3rd rack travel in: 0,30...1,70
Speed rpm : 1250

LOW IDLE 1

Control lever

position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,50

Testing:

Speed rpm : 100
Minimum rack trave: 1,00
Speed rpm : 350
Rack travel in mm : 6,90...7,10
Rack travel in mm : 2,00
Speed rpm : 550...610
Speed rpm : 700
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 500
Rack travel in m: 10,60...10,70
2nd speed rpm : 700
Rack travel in m: 10,10...10,30
3rd speed rpm : 900
Rack travel in m: 9,20...9,50
4th speed rpm : 1025
Rack travel in m: 9,00...9,10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm3/ : 47,5...49,5
1000 s: (45,5...51,5)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 700
Del.quantity cm3/ : 47,5...49,5
1000 s: (45,5...51,5)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version

Speed rpm : 1065...1075

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00...21,00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6,90...7,10
Del.quantity cm3/ : 0,75...1,05

Remarks:

K01

: POCLAIN

APPLICATION
Excavator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MM 5,9 A 8
Edition : 04.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 288

Injection pump
Pump designation : PES6A80D32ORS1271
Governor
Governor design. : RSV350...1100A2B664-1R

Customer-spec. information
Customer : MM

Engine : D 229-6

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Prestroke mm : 2,2...2,3
: (2,15...2,35)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

K02

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9,20...9,30

Del. quantity cm³/ : 4,65...4,75

100 s: (4,45...4,95)

Spread cm³ : 0,25

100 s: (0,4)

2nd speed rpm : 350
Rack travel in mm : 6,90...7,10
Del. quantity cm³/ : 0,7...1,0
100 s: (0,4...1,3)
Spread cm³ : 0,2
100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : 4,0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Del. quantity : 46,5...47,5
1000 : (44,0...50,0)
Spread cm³ : 2,5
1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 39...47

Testing:
1st rack travel in: 8,20
Speed rpm : 1140...1150
2nd rack travel in: 4,00
Speed rpm : 1170...1200
3rd rack travel in: 0,00...1,70
Speed rpm : 1350

LOW IDLE 1
Control lever

position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,50

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 6,90...7,10
Rack travel in mm : 2,00
Speed rpm : 510...570
Speed rpm : 650
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9,20...9,30
2nd speed rpm : 500
Rack travel in m: 9,20...9,40
3rd speed rpm : 400
Rack travel in m: 10,10...10,70

BREAKAWAY

1st version
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6,40...6,60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MM 5,9 A 7
 Edition : 04.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 407 083 289
 Injection pump
 Pump designation : PES6A80D32ORS1271
 Governor
 Governor design. : RSV350...1200A2B1108
 -1R

Customer-spec. information
 Customer : MM

Engine : D 229-6

1st version kW : 84.6
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,2...2,3
 : (2,15...2,35)
 Rack travel in mm : 9,00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
 & maximum rack tra: 21,00
 Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1200

 Rack travel in mm : 9,70...9,80

 Del. quantity cm³/ : 5,25...5,35

 100 s: (5,05...5,55)

 Spread cm³ : 0,25

 100 s: (0,4)

 2nd speed rpm : 350
 Rack travel in mm : 6,90...7,10
 Del. quantity cm³/ : 0,70...1,00
 100 s: (0,40...1,30)
 Spread cm³ : 0,2
 100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0,3...1,0

Governor spring pre-tension
 Click setting x : 4,2

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Del. quantity : 52,5...53,5
 1000 : (50,5...55,5)
 Spread cm³ : 2,2
 1000 : (4,0)

RATED SPEED

1st version
 Control lever
 position degrees: 42...50

Testing:
 1st rack travel in: 8,70
 Speed rpm : 1240...1250
 2nd rack travel in: 4,00
 Speed rpm : 1290...1320
 3rd rack travel in: 0,00...1,70

Speed rpm : 1450

LOW IDLE 1

Control lever

position degrees: 14...22

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 6,40...6,60

Testing:

Speed rpm : 100

Minimum rack trave: 19,00

Speed rpm : 350

Rack travel in mm : 6,90...7,10

Rack travel in mm : 2,00

Speed rpm : 630...690

Speed rpm : 800

Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200

Rack travel in m: 9,70...9,80

2nd speed rpm : 1000

Rack travel in m: 10,00...10,30

3rd speed rpm : 800

Rack travel in m: 10,80...11,00

4th speed rpm : 500

Rack travel in m: 11,20...11,30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del. quantity cm3/ : 57,0...59,0

1000 s: (55,0...61,0)

Spread cm3 : 3,5

1000 s: (4,5)

Speed rpm : 500

Del. quantity cm3/ : 56,5...58,5

1000 s: (55,5...60,5)

Spread cm3 : 3,5

1000 s: (4,5)

BREAKAWAY

1st version

Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100

Rack travel in mm : 19,00

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 5,9 A 6
Edition : 04.03.88
Replaces : -
Test oil : ISO-4113
Combination no. : 9 407 083 290
Injection pump
Pump designation : PES6A80D32ORS1271
Governor
Governor design. : RSV350...1000A1B2029
-1R

Customer-spec. information
Customer : MWM

Engine : D 229-6

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00X2,00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Prestroke mm : 2,2...2,3
: (2,15...2,35)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

K06

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1000
Rack travel in mm : 9,70...9,80
Del. quantity cm³/ : 4,9...5,0
100 s: (4,7...5,2)
Spread cm³ : 0,24
100 s: (0,4)
2nd speed rpm : 350
Rack travel in mm : 6,90...7,10
Del. quantity cm³/ : 0,7...1,0
100 s: (0,4...1,3)
Spread cm³ : 0,2
100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : 5,2

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del. quantity : 49,0...50,0
1000 : (47,5...51,5)
Spread cm³ : 2,5
1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 8,70
Speed rpm : 1040...1050
2nd rack travel in: 4,00
Speed rpm : 1070...1100
3rd rack travel in: 0,30...1,70
Speed rpm : 1200

LOW IDLE 1

Control lever
position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,50

Testing:
Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 6,90...7,10
Rack travel in mm : 2,00
Speed rpm : 540...600
Speed rpm : 670
Maximum rack trave: 1,00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9,70...9,80
2nd speed rpm : 700
Rack travel in m: 10,60...10,90
3rd speed rpm : 500
Rack travel in m: 11,20...11,30

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 700
Del.quantity cm3/ : 53,0...55,0
1000 s: 51,0...57,0)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 53,5...55,5
1000 s: (51,5...57,5)
Spread cm3 : 3,5
1000 s: (4,5)

BREAKAWAY

1st version
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00

Remarks:
: FIAT ALLIS

APPLICATION
Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 N 17
Edition : 04.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 292

Injection pump
Pump designation : PES6A90D410RS2293
Governor
Governor design. : RSV350...1200A1B1086
-1L

Customer-spec. information
Customer : DAIMLER-BENZ-BRAS.

Engine : OM 352 A

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
: (2,1...2,3)

Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

K08

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 8,65...8,75

Del. quantity cm³/ : 5,05...5,15

100 s : (4,8...5,3)

Spread cm³ : 0,3

100 s : (0,5)

2nd speed rpm : 350

Rack travel in mm : 7,40...7,60

Del. quantity cm³/ : 1,35...1,75

100 s : (0,95...2,15)

Spread cm³ : 0,25

100 s : (0,45)

3rd speed rpm : 900

Rack travel in mm : 9,7...10,0

Del. quantity cm³/ : 5,75...5,95

100 s : (5,4...6,3)

Spread cm³ : 0,4

100 s : (0,55)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0,3...1,0

Governor spring pre-tension

Click setting x : 6,0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del. quantity : 50,5...51,5

1000 : (48,5...53,5)

Spread cm³ : 3,0

1000 : (5,0)

RATED SPEED

1st version

Control lever

position degrees: 66...74

Testing:

1st rack travel in: 7,65

Speed rpm : 1245...1255

2nd rack travel in: 4,00

Speed rpm : 1265...1295
3rd rack travel in: 0,30...1,70
Speed rpm : 1400

LOW IDLE 1

Control lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 7,00

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 7,40...7,50
Rack travel in mm : 2,00
Speed rpm : 560...620
Speed rpm : 750
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 8,65...8,75
2nd speed rpm : 900
Rack travel in m: 9,70...10,00
3rd speed rpm : 500
Rack travel in m: 10,15...10,25

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 900
Del.quantity cm3/ : 57,5...59,5
1000 s: (55,0...62,0)
Spread cm3 : 4,0
1000 s: (5,5)
Speed rpm : 500
Del.quantity cm3/ : 51,5...53,5
1000 s: (49,0...56,0)
Spread cm3 : 4,0
1000 s: (5,5)

BREAKAWAY

1st version

Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 13,70...14,30

Remarks:

: KOMATSU

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 N 18
Edition : 07.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 293

Injection pump
Pump designation : PES6A90D410RS2293Z
Governor
Governor design. : RSV350...1250A2B776L

Customer-spec. information
Customer : DAIMLER-BENZ-BRAS.

Engine : OM 352

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00X2,00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Prestroke mm : 2,15...2,25
: (2,10...2,30)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

K10

1st speed rpm : 1250

Rack travel in mm : 9,85...9,95

Del. quantity cm³/ : 6,15...6,25

100 s : (5,9...6,5)

Spread cm³ : 0,3

100 s : (0,5)

2nd speed rpm : 350

Rack travel in mm : 7,40...7,60

Del. quantity cm³/ : 1,25...1,65

100 s : (0,85...2,05)

Spread cm³ : 0,25

100 s : (0,45)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0,3...1,0

Governor spring pre-tension

Click setting x : 4,75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 61,5...62,5

1000 : (59,5...64,5)

Spread cm³ : 3,0

1000 : (5,0)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 8,85

Speed rpm : 1290...1300

2nd rack travel in: 4,00

Speed rpm : 1355...1385

3rd rack travel in: 0,30...1,70

Speed rpm : 1500

LOW IDLE 1

Control lever

position degrees: 20...28

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 7,00

Testing:

Speed rpm : 100

Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 7,40...7,60
Rack travel in mm : 2,00
Speed rpm : 620...680
Speed rpm : 750
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1250
Rack travel in m: 9,85...9,95
2nd speed rpm : 500
Rack travel in m: 9,85...10,05
3rd speed rpm : 400
Rack travel in m: 10,80...11,40

BREAKAWAY

1st version

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 13,70...14,30

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6,90...7,10

Remarks:

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 3,9 B 5
Edition : 07.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 407 083 296

Injection pump
Pump designation : PES4A80D32ORS1282
Governor
Governor design. : RSV350...1500A2B2122
-2R

Customer-spec. information
Customer : MWM

Engine : D 229-4

TEST BENCH REQUIREMENTS

Overflow valve : 1 417 413 000

Inlet press., bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values ____

BEGINNING OF DELIVERY

Prestroke mm : 2,20...2,30
: (2,15...2,35)
Rack travel in mm : 9,00
Firing order : 1-5-3-6-2-4

Phasing : 0-90-180-270
Tolerance + - ° : 0,50 (0,75)

BEGINNING OF DELIVERY DIFFERENCE

K12

betw. rack trav. m: 10,50
& maximum rack tra: 21,00
Difference ° CS : 4...5

BASIC SETTING

1st speed rpm : 1500

Rack travel in mm : 10,25...10,35

Del. quantity cm³/ : 6,0...6,1

100 s: (5,8...6,3)

Spread cm³ : 0,25

100 s: (0,40)

2nd speed rpm : 350
Rack travel in mm : 6,90...7,10
Del. quantity cm³/ : 0,75...1,05

100 s: (0,45...1,35)

Spread cm³ : 0,2

100 s: (0,35)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0,3...1,0

Governor spring pre-tension
Click setting x : 6,0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1500
Del. quantity : 60,0...61,0

1000 : (59,0...62,0)

Spread cm³ : 2,5

1000 : (4,0)

RATED SPEED

1st version
Control lever
position degrees: 62...70

Testing:
1st rack travel in: 9,25
Speed rpm : 1540...1550
2nd rack travel in: 4,00
Speed rpm : 1610...1640
3rd rack travel in: 0,30...1,70
Speed rpm : 1800

LOW IDLE 1
Control lever

position degrees: 22...30
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6,50

Testing:

Speed rpm : 100
Minimum rack trave: 19,00
Speed rpm : 350
Rack travel in mm : 6,90...7,10
Rack travel in mm : 2,00
Speed rpm : 670...730
Speed rpm : 800
Maximum rack trave: 1,00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1500
Rack travel in m: 10,25...10,35
2nd speed rpm : 1100
Rack travel in m: 10,60...10,90
3rd speed rpm : 800
Rack travel in m: 11,00...11,30
4th speed rpm : 500
Rack travel in m: 11,20...11,30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100
Del.quantity cm3/ : 60,5...62,5
1000 s: (59,0...64,0)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 800
Del.quantity cm3/ : 58,5...60,5
1000 s: (57,0...62,0)
Spread cm3 : 3,5
1000 s: (4,5)
Speed rpm : 500
Del.quantity cm3/ : 55,0...57,0
1000 s: (53,5...58,5)
Spread cm3 : 3,5
1000 s: (4,5)

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19,00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6,40...6,60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 3,0 b 1
Edition : 11.03.88
Replaces : 18.9.87
Test oil : ISO-4113

Combination no. : 0 400 463 146

Injection pump
Pump designation : PES3A75D410/3RS1324
EP type number : 0 410 473 977
Governor
Governor design. : RSV325...900A7C602-1

Governer no. : 0 420 232 388

Customer-spec. information
Customer : KHD

Engine : F3L912

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
: (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.70...12.90

Del. quantity cm3/ : 5.2...5.3

100 s: (5.1...5.5)

Spread cm3 : 0.2

100 s: (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 8.6...8.8

Del. quantity cm3/ : 0.7...1.3

100 s: (0.5...1.4)

Spread cm3 : 0.2

100 s: (0.3)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 52.5...53.5

1000 : (51.0...55.0)

Spread cm3 : 2.50

1000 : (4.00)

RATED SPEED

1st version

Control lever

position degrees: 50...58

Testing:

1st rack travel in: 11.40

Speed rpm : 940...950

2nd rack travel in: 4.00

Speed rpm : 955...985

3rd rack travel in: 4.00

Speed rpm : 1005...1035

4th rack travel in: 1100
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 8.2
Speed rpm : 325
Rack travel in mm : 8.60...8.80
Rack travel in mm : 2.00
Speed rpm : 525...585

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 700
Rack travel in m: 12.70...12.90
2nd speed rpm : 500
Rack travel in m: 13.00...13.10
4th speed rpm : 765
Rack travel in m: 12.60...12.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 49.0...50.0
1000 s: (47.5...51.5)
Spread cm3 : 2.50
1000 s: (4.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.40
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...110.0
1000 s: (97.0...113.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 19,0 h
 Edition : 25.03.88
 Replaces : 18.12.87
 Test oil : ISO-4113

Combination no. : 0 400 640 100

Injection pump
 Pump designation : PE12A95D61OLS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1047D
 L
 Governor no. : 0 420 214 242

Customer-spec. information
 Customer : KHD

Engine : F12L413FW

1st version kW : 230,0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

 Rack travel in mm : 9.20...9.30

 Del. quantity cm³/ : 8.1...8.3

 100 s : (7.9...8.5)

 Spread cm³ : 0.3

 100 s : (0.6)

 2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.2...1.8
 100 s : (0.9...2.0)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.30
 2nd speed rpm : 395
 travel mm : 2.20...2.60
 3rd speed rpm : 615
 travel mm : 3.10...3.60
 4th speed rpm : 1195
 travel mm : 8.40...8.50
 5th speed rpm : 1235
 travel mm : 9.00...9.20

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1180
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150

Del. quantity : 81.0...83.0
1000 : (79.0...85.0)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:
1st rack travel in: 8.20
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...17

Testing:
Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 320...425

TORQUE CONTROL

Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.20...9.30
2nd speed rpm : 500
Rack travel in m: 10.20...10.30
3rd speed rpm : 935
Rack travel in m: 9.90...10.10
4th speed rpm : 1045
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm3/ : 93.5...96.5
1000 s: (91.0...99.0)
Speed rpm : 750
Del. quantity cm3/ : 84.5...87.5
1000 s: (82.0...90.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.20
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 8,7 d 1
 Edition : 25.03.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 646 202

Injection pump
 Pump designation : PE6A90D41ORS2124
 EP type number : 0 410 696 141
 Governor
 Governor design. : RGV300...1250AB81SDL
 Governor no. : 0 420 214 164

Customer-spec. information
 Customer : DAIMLER-BENZ

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
 : (2.10...2.30)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

K18

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.20...10.30

Del.quantity cm3/ : 8.6...8.7

100 s: (8.4...8.9)

Spread cm3 : 0.3

100 s: (0.4)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm3/ : 1.0...1.6

100 s: (0.8...1.8)

Spread cm3 : 0.2

100 s: (0.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.50

2nd speed rpm : 550
 travel mm : 3.20...3.80

3rd speed rpm : 750
 travel mm : 4.60...4.90

4th speed rpm : 1290
 travel mm : 8.40...8.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1290

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 86.0...87.0

1000 : (84.0...89.0)

Spread cm3 : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 61...69

Testing:

1st rack travel in: 9.20
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1360...1390
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...17

Testing:

Speed rpm : 100
Minimum rack trave: 7.90
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...475

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 83.5...86.5
1000 s: (81.5...88.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1290...1300

INTERMEDIATE RATED SPEED

Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 115.0...125.0
1000 s: (112.0...128.0)

Remarks:

;

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 15,8 c
Edition : 22.04.88
Replaces : 9.82
Test oil : ISO-4113

Combination no. : 0 400 649 208

Injection pump
Pump designation : PE10A95D610/4LS2452
EP type number : 0 410 699 998
Governor
Governor design. : RQV300...1150AB1047D
L

Governer no. : 0 420 214 242

Customer-spec. information
Customer : KHD

Engine : F10L413FW

1st version kW : 192.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness : 6.00x2.00x600
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)

K20

Rack travel in mm : 9.00...12.00
Firing order : 1- 10- 9- 4- 3- 6-
5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
216-243-288-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.10...9.20

Del. quantity cm³/ : 8.1...8.3

100 s: (7.9...8.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.2...1.8

100 s: (0.9...2.0)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.20...1.30

2nd speed rpm : 395
travel mm : 2.20...2.60

3rd speed rpm : 615
travel mm : 3.10...3.60

4th speed rpm : 1195
travel mm : 8.40...8.50

5th speed rpm : 1235
travel mm : 9.00...9.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1180

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 81.0...83.0

1000 : (79.0...85.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:
1st rack travel in: 8.10
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1235...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 9...17

Testing:
Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 320...425

TORQUE CONTROL
Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.10...9.20
2nd speed rpm : 500
Rack travel in m: 10.10...10.20
3rd speed rpm : 935
Rack travel in m: 9.80...10.00
4th speed rpm : 1045
Rack travel in m: 9.30...9.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del. quantity cm³/ : 93.5...96.5
 1000 s: (91.0...99.0)
Speed rpm : 750
Del. quantity cm³/ : 84.5...87.5
 1000 s: (82.0...90.0)

BREAKAWAY

K21

1st version
1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
 1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:
:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

When accelerating from engine speed
"0", no voltage in starting solenoid.
2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

APPLICATION
Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 15.8 n1
Edition : 25.03.88
Replaces : 7.12.87
Test oil : ISO-4113

Combination no. : 0 400 649 219

Injection pump
Pump designation : PE10A95D610/4LS2589
EP type number : 0 410 699 994
Governor
Governor design. : RQV300...1150AB1047D
L
Governor no. : 0 420 214 242

Customer-spec. information
Customer : KHD

Engine : F10L413 FW

1st version kW : 177.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
: (1.45...1.65)

Rack travel in mm : 9.00...12.00
Firing order : 1-10- 9- 4- 3- 6- 5-
8- 7- 2

Phasing : 0-27-72-99-144-171-
216-243-288-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.30...9.40

Del. quantity cm3/ : 6.9...7.1

100 s: (6.7...7.3)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.4

Del. quantity cm3/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.30

2nd speed rpm : 400

travel mm : 2.20...2.60

3rd speed rpm : 600

travel mm : 3.00...3.50

4th speed rpm : 1195

travel mm : 8.40...8.50

5th speed rpm : 1235

travel mm : 9.10...9.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 69.0...71.0

1000 : (67.0...73.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:
1st rack travel in: 8.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 10...18

Testing:
Speed rpm : 100
Minimum rack travel: 7.80
Speed rpm : 300
Rack travel in mm : 7.20...7.40

CONSTANT REGULATION
Speed rpm : 320...430

TORQUE CONTROL
Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.30...9.40
2nd speed rpm : 500
Rack travel in m: 10.30...10.40
3rd speed rpm : 935
Rack travel in m: 10.00...10.20
4th speed rpm : 1045
Rack travel in m: 9.50...9.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 800
Del. quantity cm³/ : 75.5...78.5
 1000 s: (73.0...81.0)
Speed rpm : 650
Del. quantity cm³/ : 93.5...96.5
 1000 s: (91.0...99.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
 1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

When accelerating from engine speed
"0", no voltage in starting solenoid.
2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

APPLICATION
Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 n 6
 Edition : 06.04.88
 Replaces : 12.9.86
 Test oil : ISO-4113

Combination no. : 0 400 676 185

Injection pump
 Pump designation : PE6A95D41ORS2575
 EP type number : 0 410 696 984
 Governor
 Governor design. : RSV250...1200ASC2198
 -3L
 Governor no. : 0 420 232 452

Customer-spec. information
 Customer : DAF

Engine : DH 825

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 10.40...10.50

Del. quantity cm³/ : 7.3...7.4

100 s: (7.1...7.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0
 Rack travel in mm : 6.1...6.3
 Del. quantity cm³/ : 0.7...1.1
 100 s: (0.4...1.3)

Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Del. quantity : 73.5...74.5
 1000 : (71.5...76.5)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 59...67

Testing:

1st rack travel in: 9.40
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1300...1330
3rd rack travel in: 4.00
Speed rpm : 1340...1370
4th rack travel in: 1505
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.7
Speed rpm : 250
Rack travel in mm : 6.10...6.30
Rack travel in mm : 2.00
Speed rpm : 655...715

TORQUE CONTROL

Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 10.40...10.50
2nd speed rpm : 500
Rack travel in m: 11.20...11.30
3rd speed rpm : 800
Rack travel in m: 11.10...11.20
4th speed rpm : 940
Rack travel in m: 10.70...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 75.0...77.0
1000 s: (72.5...79.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...145.0
1000 s: (132.0...148.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250

K25

Rack travel in mm : 6.10...6.30
Del.quantity cm3/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 4,0 a 9
 Edition : 17.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 844 090
 Injection pump
 Pump designation : PES4A90D41ORS2666-2
 Governor
 Governor design. : RQV300...1400AB1065-SL

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 66,0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1,0

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6,00x1,50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Prestroke mm : 2,25...2,35
 : (2,2...2,4)
 Rack travel in mm : 9,00...12,00
 Firing order : 1-3-4-2

Phasing : 0-90-180-270
 Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

1st speed rpm : 1400
 Rack travel in mm : 10,90...11,00
 Del. quantity cm³/ : 6,3...6,4
 100 s : (6,1...6,6)
 Spread cm³ : 0,3
 100 s : (0,5)
 2nd speed rpm : 300
 Rack travel in mm : 8,60...8,80
 Del. quantity cm³/ : 0,8...1,2
 100 s : (0,6...1,4)
 Spread cm³ : 0,2
 100 s : (0,4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 0,8...1,3
 2nd speed rpm : 500
 travel mm : 2,3...2,8
 3rd speed rpm : 750
 travel mm : 4,1...4,3
 4th speed rpm : 1500
 travel mm : 8,5...8,6

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1500
 Rack travel in mm : 15,20...17,80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1400
 Del. quantity : 63,0...64,0
 1000 : (61,0...66,0)
 Spread cm³ : 3,0
 1000 : (5,0)

RATED SPEED

1st version
 Control lever
 position degrees: 59...67

Testing:
 1st rack travel in: 9,90

Speed rpm : 1450...1460
2nd rack travel in: 4,00
Speed rpm : 1560...1590
4th rack travel in: 1630
Speed rpm : 0,00...1,00

LOW IDLE 1
Control lever
position degrees: 20...28

Testing:
Speed rpm : 100
Minimum rack travel: 10,20
Speed rpm : 300
Rack travel in mm : 8,60...8,80

CONSTANT REGULATION
Speed rpm : 540...680

TORQUE CONTROL
Dimension a mm : 1,00
Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 10,90...11,00
2nd speed rpm : 630
Rack travel in m: 12,20...12,30
3rd speed rpm : 900
Rack travel in m: 11,50...11,70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 630
Del. quantity cm³/ : 55,5...58,5
1000 s: (53,0...61,0)
Speed rpm : 900
Del. quantity cm³/ : 54,5...57,5
1000 s: (52,0...60,0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9,90
Speed rpm : 1450...1460

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 78,0...88,0
1000 s: (75,0...91,0)
Rack travel in mm : 17,0...17,40

Remarks:
Set shutoff stop to contact at
3.0...3.5 mm control-rod travel.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11.1 y
 Edition : 25.03.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 846 325

Injection pump
 Pump designation : PES6A9SD41OLS2409
 EP type number : 0 410 896 962
 Governor
 Governor design. : RQ250/1150AB839DL
 Governor no. : 0 420 202 247

Customer-spec. information
 Customer : MAN

Engine : D2556MX/MXF

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.30...1.40
 : (1.25...1.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.50...11.60

Del. quantity cm³/ : 11.7...11.9
 100 s: (11.5...12.1)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 250.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.0...1.6
 100 s: (0.7...1.8)

Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 600
 Rack travel in mm : 15.40...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 117.5...119.5
 1000 : (115.5...121.5)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600
 Rack travel in mm : 15.9

Testing:

1st rack travel in: 11.50
 Speed rpm : 1195...1210
 2nd rack travel in: 4.00
 Speed rpm : 1250...1280
 3rd rack travel in: 4.00

LOW IDLE 1

Setting point w/out bumper spring
 Speed rpm : 250
 Rack travel in mm : 6.5

Testing:

Speed rpm : 150
Minimum rack trave: 7.20
Speed rpm : 250
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 320...360

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.50...11.60
2nd speed rpm : 500
Rack travel in m: 11.90...12.00
3rd speed rpm : 925
Rack travel in m: 11.80...11.90
4th speed rpm : 1000
Rack travel in m: 11.50...11.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 116.0...119.0
1000 s: (114.0...121.0)
Speed rpm : 500
Del.quantity cm3/ : <118.5
1000 s: (<120.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1195...1210

INTERMEDIATE RATED SPEED

Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 116.5...126.5
1000 s: (113.5...129.5)
Rack travel in mm : 13.70...14.30

Remarks:

:

Set idle stop at 250 min -1 to a
control-rod travel of 6.5 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 v 10
Edition : 25.03.88
Replaces : 18.9.87
Test oil : ISO-4113

Combination no. : 0 400 846 493

Injection pump
Pump designation : PES6A900410RS2596
EP type number : 0 410 896 073
Governor
Governor design. : RQV300...1400AB1120-1L
Governor no. : 0 420 212 157

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM352A

1st version kW : 124.0
Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 11.90...12.00

Del. quantity cm³/ : 7.3...7.4

100 s : (7.1...7.6)

Spread cm³ : 0.3

100 s : (0.4)

2nd speed rpm : 300.0

Rack travel in mm : 8.5...8.7

Del. quantity cm³/ : 0.9...1.5

100 s : (0.7...1.7)

Spread cm³ : 0.2

100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1500

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1400

Aneroid pressure h : 700

Del. quantity : 73.5...74.5

1000 : (71.5...76.5)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 59...67

Testing:

1st rack travel in: 10.90

Speed rpm : 1440...1450

2nd rack travel in: 4.00

Speed rpm : 1570...1600

4th rack travel in: 1750

Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 22...30

Testing:
Speed rpm : 100
Minimum rack travel: 10.10
Speed rpm : 300
Rack travel in mm : 8.50...8.70

CONSTANT REGULATION
Speed rpm : 590...660

TORQUE CONTROL
Dimension a mm : 1.10
Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 11.90...12.00
2nd speed rpm : 500
Rack travel in m: 13.00...13.10
3rd speed rpm : 1000
Rack travel in m: 12.70...12.90
4th speed rpm : 1200
Rack travel in m: 12.10...12.40

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 13.00...13.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.00...12.10
2nd pressure hPa : 320
Rack travel in m: 12.70...12.80
3rd pressure hPa : 220
Rack travel in m: 12.20...12.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 500
Del. quantity cm³/ : 67.5...69.5
1000 s: (65.5...71.5)
Aneroid pressure h: -
Speed rpm : 500

Del. quantity cm³/ : 56.0...58.0
1000 s: (54.0...60.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.90
Speed rpm : 1440...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 71.0...81.0
1000 s: (68.0...84.0)
Rack travel in mm : 14.90...15.30

Remarks:

:
Set shutoff stop to contact at
3.0...3.5 mm control-rod travel.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,4 b4
Edition : 19.04.88
Replaces : 22.1.88
Test oil : ISO-4113

Combination no. : 0 400 846 532

Injection pump
Pump designation : PES6A95D410LS2639-1
EP type number : 0 410 896 920
Governor
Governor design. : RQ250/1100AB1137-9L
Governor no. : 0 420 200 091

Customer-spec. information
Customer : MAN

Engine : D2566MF/220

1st version kW : 162.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
: (1.45...1.55)

Rack travel in mm : 9.00...12.00

L04

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 14.30...14.40

Del.quantity cm3/ : 13.0...13.2

100 s: (12.8...13.4)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.4...7.6

Del.quantity cm3/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 130.0...132.0

1000 : (128.0...134.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.80

Speed rpm : 1145...1160

2nd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 7.5

Testing:

Speed rpm : 100

Minimum rack trave: 8.90

Speed rpm : 250

Rack travel in mm : 7.40...7.60

Rack travel in mm : 2.00

Speed rpm : 390...430

TORQUE CONTROL

Dimension a mm : 0.60

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: 12.80...12.90

2nd speed rpm : 600

Rack travel in m: 14.30...14.40

3rd speed rpm : 865

Rack travel in m: 13.80...14.00

4th speed rpm : 940

Rack travel in m: 13.10...13.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500

Del.quantity cm³/ : 130.0...133.0

1000 s: (127.5...135.5)

Speed rpm : 1100

Del.quantity cm³/ : 122.0...126.0

1000 s: (119.5...128.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80

Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 105.0...115.0

1000 s: (102.0...118.0)

Remarks:

: MAN-NR. 2-7514

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CAS 5,5 d
Edition : 10.5.88
Replaces : -
Test oil : ISP-4113

Combination no. : 0 400 874 212

Injection pump
Pump designation : PES4A85D42OLS2459
Governor
Governor design. : RSV375...1000A2B782
DR

Customer-spec. information
Customer : CASE

Engine : A-336 BD

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : WS 187P (CASE)

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 9 681 230 706

Outside diameter
x Wall thickness
x Length mm : 6,00X2,00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.05...2.15
: (2.00...2.20)

Firing order : 1-3-4-2

Phasing : 0-90-180-270
Tolerance + - ° : 0.5 (0.75)

BASIC SETTING

1st speed rpm : 1000
Rack travel in mm : 11.60...1.70
Del. quantity cm³/ : 7.5...7.7
100 s : (7.4...7.8)
Spread cm³ : 0.3
100 s : (-)

2nd speed rpm : 375
Rack travel in mm : 7.40...7.60
Del. quantity cm³/ : 1.4...2.0
100 s : -
Spread cm³ : (-)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del. quantity : 75.0...77.0
1000 : (74.0...78.0)
Spread cm³ : 3.0
1000 : (-)

RATED SPEED

1st version
Control lever
position degrees: 36...44

Testing:
1st rack travel in: 10.60
Speed rpm : 1040...1050
2nd rack travel in: 3.80
Speed rpm : 1105...1135
4th rack travel in: 1150
Speed rpm : 0.40...2.60

LOW IDLE 1

Control lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 375

Rack travel in mm : 7.50

Testing:

Speed rpm : 150
Minimum rack travel: 19.00
Speed rpm : 375
Rack travel in mm : 7.30...7.70
Rack travel in mm : 2.70
Speed rpm : 435...465
Speed rpm : 550
Maximum rack travel: 1.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 11.60...11.70
2nd speed rpm : 680
Rack travel in m: 12.00...12.20
3rd speed rpm : 400
Rack travel in m: 12.00...12.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 75.0...79.5
1000 s: (74.0...80.5)
Spread cm3 : -
1000 s: (-)
Speed rpm : 650
Del.quantity cm3/ : <79.2
1000 s: (-)
Spread cm3 : -
1000 s: (-)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 125.0...130.0
1000 s: (-)

HIGH IDLE

1st version

Speed rpm : 1100
Del.quantity cm3/ : 10.4...16.4
1000 s: (-)

LOW IDLE

L07

Speed rpm : 375
Del.quantity cm3/ : 14.0...20.0
1000 s: (-)

Remarks:

: CASE NO. A-139028

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 4,0 b 1
 Edition : 25.03.88
 Replaces : 26.2.88
 Test oil : ISO-4113

Combination no. : 0 400 874 246

Injection pump
 Pump designation : PES4A90D41ORS2666
 EP type number : 0 410 894 029
 Governor
 Governor design. : RSV350...1250AOC2006
 -SL
 Governor no. : 0 420 232 497

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 63.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
 : (2.20...2.40)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1230

Rack travel in mm : 10.70...10.80

Del. quantity cm3/ : 6.2...6.3

100 s: (6.0...6.5)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 350.0

Rack travel in mm : 7.9...8.1

Del. quantity cm3/ : 1.0...1.4

100 s: (0.8...1.6)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1230

Del. quantity : 62.0...63.0

1000 : (60.0...65.0)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 58...66

Testing:

1st rack travel in: 9.70

Speed rpm : 1270...1280

2nd rack travel in: 4.00

Speed rpm : 1350...1380

4th rack travel in: 1520

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 31...39

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 8.0

Testing:

Speed rpm : 100

Minimum rack travel: 19.50

Speed rpm : 350

Rack travel in mm : 7.90...8.10

Rack travel in mm : 2.00

Speed rpm : 480...540

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1230

Rack travel in m: 10.70...10.80

2nd speed rpm : 500

Rack travel in m: 12.00...12.10

3rd speed rpm : 800

Rack travel in m: 11.50...11.70

4th speed rpm : 1000

Rack travel in m: 11.00...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500

Del. quantity cm³/ : 54.0...56.0

1000 s: (51.5...58.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.70

Speed rpm : 1270...1280

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 78.0...88.0

1000 s: (75.0...91.0)

Rack travel in mm : 16.30...16.70

LOW IDLE

Speed rpm : 350

Rack travel in mm : 7.90...8.10

L09

Del. quantity cm³/ : 10.0...14.0

1000 s: (8.0...16.0)

Spread cm³ : 2.50

1000 s: (4.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 6,6 f
Edition : 15.5.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 876 186

Injection pump
Pump designation : PES6A95D410RS2380
Governor
Governor design. : RSV400...1100A2B647
DL

Customer-spec. information
Customer : JOHN DEERE

Engine : 6404 T

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 413 385 007

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 9 681 230 706

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1,90...2,00
: (1,85...2,05)

Rack travel in mm : 9,00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.5 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9.00...9.10

Del. quantity cm³/ : 7.8...8.2

100 s : (-)

Spread cm³ : 0.4

100 s : (-)

2nd speed rpm : 200

Rack travel in mm : 5.90...6.10

Del. quantity cm³/ : 0.7...1.5

100 s : (-)

Spread cm³ : -

100 s : (-)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.40

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 700

Del. quantity : 86.0...92.0

1000 : (84.0...94.0)

Spread cm³ : 4.0

1000 : (-)

RATED SPEED

1st version

Control lever

position degrees: 40...48

Testing:

1st rack travel in: 16.00

Speed rpm : 1100

2nd rack travel in: 12.30

Speed rpm : 1140...1150

3rd rack travel in: 8.00

Speed rpm : 1185...1215

LOW IDLE 1

Control lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.60

Testing:
Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.40...5.80
Rack travel in mm : 2.65
Speed rpm : 530...570
Speed rpm : 750
Maximum rack travel: 1.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: -
2nd speed rpm : 900
Rack travel in m: 0.30...0.50
3rd speed rpm : 750
Rack travel in m: 0.70...1.00
4th speed rpm : 450
Rack travel in m: 0.70...1.00

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 550
Pressure hPa : 145
Rack travel mm : MIN.

Measurement
Speed 1/min : 550

1st pressure hPa : 435
Rack travel in m: MAX.

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 750
Del. quantity cm³/ : 96.0...101.0
1000 s: (94.0...103.0)
Spread cm³ : -
1000 s: (-)
Aneroid pressure h: -
Speed rpm : 550
Del. quantity cm³/ : 64.0...70.0
1000 s: (62.0...72.0)
Spread cm³ : -
1000 s: (-)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: ?
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 160.0
1000 s: (-)

HIGH IDLE

1st version
Speed rpm : 1200
Del. quantity cm³/ : 21.0...30.0
1000 s: (-)

LOW IDLE

Speed rpm : 400
Del. quantity cm³/ : 12.0...16.0
1000 s: (-)

Remarks:
: 4430

Start-of-delivery mark at 14° angular displacement of the cam after start of delivery of cylinder 1 with control-rod travel = 10.50 mm.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5.7 s 1
 Edition : 25.03.88
 Replaces : 12.9.86
 Test oil : ISO-4113

Combination no. : 0 400 876 218

Injection pump
 Pump designation : PES6A90D41ORS2293
 EP type number : 0 410 896 031
 Governor
 Governor design. : RSV350...1400AOC1080
 Governor no. : 0 420 232 408

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 352

1st version kW : 92.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
 : (2.10...2.30)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 9.70...9.80

Del. quantity cm³/ : 6.3...6.4

100 s: (6.1...6.6)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 350.0

Rack travel in mm : 6.6...7.2

Del. quantity cm³/ : 1.0...1.2

100 s: (0.8...1.4)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1400

Del. quantity : 63.0...64.0

1000 : (61.0...66.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 68...76

Testing:

1st rack travel in: 8.70

Speed rpm : 1440...1445

2nd rack travel in: 4.00

Speed rpm : 1473...1486

3rd rack travel in: 4.00

Speed rpm : 1510...1540
4th rack travel in: 1570
Speed rpm : 0.30...1.40
5th rack travel in: 1445...1455
Speed rpm : 8.70

LOW IDLE 1

Control lever
position degrees: -3
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.80

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 6.70...6.90
Rack travel in mm : 2.00
Speed rpm : 450...510

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 9.70...9.80
2nd speed rpm : 600
Rack travel in m: 9.90...10.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 51.0...53.0
1000 s: (49.0...55.0)
Speed rpm : 850
Del.quantity cm3/ : 56.0...58.0
1000 s: (53.5...60.5)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 15.00...15.40

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.60...7.20
Del.quantity cm3/ : 10.0...12.0
1000 s: (8.0...14.0)
Spread cm3 : 2.50
1000 s: (4.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 6,6 e
Edition : 2.5.88
Replaces : 9.76
Test oil : ISO-4113

Combination no. : 0 400 876 244

Injection pump
Pump designation : PES6A95D41ORS2479
Governor
Governor design. : RSV400...1100A2B768D
L

Customer-spec. information
Customer : JOHN DEERE

Engine : 6404 T

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 413 385 007

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Prestroke mm : 1.90...2.00
: (1.85...2.05)
Rack travel in mm : 9.80...9.90
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.5 (0.75)

BASIC SETTING

1st speed rpm : 1100
Rack travel in mm : 9.80...9.90
Del. quantity cm³/ : 8.8...9.0
100 s : (8.5...9.3)
Spread cm³ : 0.3
100 s : (-)

2nd speed rpm : 400
Rack travel in mm : ?
Del. quantity cm³/ : 1.2...1.6
100 s : (-)
Spread cm³ : 0.3
100 s : (-)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Aneroid pressure h : 700
Del. quantity : 87.0...91.0
1000 : (85.0...93.0)
Spread cm³ : 3.0
1000 : (-)

RATED SPEED

1st version
Control lever
position degrees: 40...48

Testing:
1st rack travel in: 8.80
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1285...1315
4th rack travel in: 1300...1350
Speed rpm : 0.30...1.00

LOW IDLE 1

Control lever
position degrees: 17...25

Setting point w/out bumper spring

Speed rpm : 400

Rack travel in mm : 5.70

Testing:

Speed rpm : 100

Minimum rack travel: 19.00

Speed rpm : 400

Rack travel in mm : 5.40...5.80

Rack travel in mm : 2.60

Speed rpm : 530...570

Speed rpm : 750

Maximum rack travel: 1.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: 9.80...9.90

2nd speed rpm : 900

Rack travel in m: 10.10...10.30

3rd speed rpm : 750

Rack travel in m: 10.50...10.90

4th speed rpm : 450

Rack travel in m: 10.50...10.90

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 550

Pressure hPa : 150

Rack travel mm : -

Measurement

Speed 1/min : 550

1st pressure hPa : 430

Rack travel in m: 9.80...9.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 750

Del. quantity cm³/ : 96.0...101.0

1000 s: (94.0...103.0)

Spread cm³ : -

1000 s: (-)

Aneroid pressure h: -

Speed rpm : 500

Del. quantity cm³/ : 63.5...70.5

1000 s: (61.5...72.5)

Spread cm³ : -

1000 s: (-)

BREAKAWAY

L15

1st version

1mm rack travel less than

full load rack tr: 8.80

Speed rpm : 1140...1155

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 160.0

1000 s: (-)

HIGH IDLE

1st version

Speed rpm : 1200

Del. quantity cm³/ : 20.0...30.0

1000 s: (-)

LOW IDLE

Speed rpm : 400

Del. quantity cm³/ : 12.0...16.0

1000 s: (-)

Remarks:

: 4430

Start-of-delivery mark at 14° angular displacement of the cam after start of delivery of cylinder 1 with control-rod travel = 10.50 mm.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 a
 Edition : 16.5.88
 Replaces : -
 Test oil : ISO-4133
 Combination no. : 0 400 876 272
 Injection pump
 Pump designation : PES6A95D410RS2545
 Governor
 Governor design. : RSV400...1100A7B2026
 L

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6466 T

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve
 : 1 413 385 007
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 008
 Outside diameter
 x Wall thickness
 x Length mm : 6,00x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27
 Prestroke mm : 1.85...1.95
 : (1.80...2.00)
 Rack travel in mm : 9.00...12.00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.5(0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1080
 Rack travel in mm : 10.20...10.30
 Del. quantity cm3/ : 9.4...9.8
 100 s : (9.2...10.0)
 Spread cm3 : 0.3
 100 s : (-)
 2nd speed rpm : 400
 Rack travel in mm : 5.70...5.90
 Del. quantity cm3/ : 1.2...1.6
 100 s : (-)
 Spread cm3 : -
 100 s : (-)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1080
 Del. quantity : 94.0...98.0
 1000 : (92.0...100.0)
 Spread cm3 : 3.0
 1000 : (-)

RATED SPEED

1st version
 Control lever
 position degrees: 66...74

Testing:
 1st rack travel in: 9.20
 Speed rpm : 1115...1125
 2nd rack travel in: 5.00
 Speed rpm : 1130...1160
 4th rack travel in: 1200
 Speed rpm : 0.30...1.70

LOW IDLE 1
 Control lever

position degrees: 25...33
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.80

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.70...5.90
Rack travel in mm : 2.00
Speed rpm : 520...580

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.20...10.30
2nd speed rpm : 750
Rack travel in m: 10.20...10.40
3rd speed rpm : 450
Rack travel in m: 10.90...11.50

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 160.0...190.0
1000 s: (-)

HIGH IDLE

1st version
Speed rpm : 1145
Del.quantity cm3/ : 23.0...33.0
1000 s: (-)

LOW IDLE

Speed rpm : 400
Del.quantity cm3/ : 12.0...16.0
1000 s: (-)

Remarks:

Start-of-delivery mark = 15.5° after
start of delivery cyl. 1.

APPLICATION

L17

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 c 2
 Edition : 25.03.88
 Replaces : 11.12.87
 Test oil : ISO-4113

Combination no. : 0 400 876 335

Injection pump
 Pump designation : PES6A90D410RS2710
 EP type number : 0 410 896 082
 Governor
 Governor design. : RSV350...1200A1C1154
 L
 Governor no. : 0 420 232 468

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 74.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.25...2.35
 : (2.20...2.40)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

 Rack travel in mm : 9.30...9.40

 Del. quantity cm³/ : 5.1...5.2

 100 s : (4.9...5.4)

 Spread cm³ : 0.3

 100 s : (0.4)

 2nd speed rpm : 370.0
 Rack travel in mm : 7.9...8.5
 Del. quantity cm³/ : 1.0...1.2
 100 s : (0.8...1.4)
 Spread cm³ : 0.2
 100 s : (0.4)

GUIDE SLEEVE POSITION

Governor spring pre-tension
 Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Del. quantity : 51.0...52.0
 1000 : (49.0...54.0)
 Spread cm³ : 3.00
 1000 : (4.50)

RATED SPEED

1st version
 Control lever
 position degrees : 59...67

Testing:
 1st rack travel in: 8.30
 Speed rpm : 1240...1245
 2nd rack travel in: 4.00
 Speed rpm : 1261...1274
 3rd rack travel in: 4.00
 Speed rpm : 1300...1330
 4th rack travel in: 1400
 Speed rpm : 0.30...1.40
 5th rack travel in: 1255...1265

Speed rpm : 8.30

LOW IDLE 1

Control lever

position degrees: -3

Setting point w/out bumper spring

Speed rpm : 370

Rack travel in mm : 8.20

Testing:

Speed rpm : 100

Minimum rack trave: 19.50

Speed rpm : 370

Rack travel in mm : 8.10...8.30

Rack travel in mm : 2.00

Speed rpm : 460...520

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200

Rack travel in m: 9.30...9.40

2nd speed rpm : 600

Rack travel in m: 10.30...10.50

3rd speed rpm : 900

Rack travel in m: 9.80...10.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600

Del.quantity cm3/ : 41.0...43.0

1000 s: (38.5...45.5)

Speed rpm : 900

Del.quantity cm3/ : 46.0...49.0

1000 s: (43.5...51.5)

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 85.0...95.0

1000 s: (82.0...98.0)

Rack travel in mm : 17.30...17.70

LOW IDLE

Speed rpm : 370

Rack travel in mm : 7.90...8.50

Del.quantity cm3/ : 10.0...12.0

1000 s: (8.0...14.0)

Spread cm3 : 2.50

1000 s: (4.50)

Remarks:

:

APPLICATION

Unimog

L19

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 W
Edition : 14.01.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 876 345

Injection pump
Pump designation : PES6A1000410RS2754
EP type number : 0 410 806 002
Governor
Governor design. : RSV400...1100A2C2229
L
Governor no. : 0 420 232 492

Customer-spec. information
Customer : JOHN DEERE

Engine : 6076 TF

1st version kW : 142.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50...10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.00...12.10

Del.quantity cm3/ : 12.0...12.2

100 s: (11.8...12.4)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.0...5.2

Del.quantity cm3/ : 1.2...1.6

100 s: (0.9...1.8)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 120.0...122.0

1000 : (118.0...124.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 40...48

Testing:

1st rack travel in: 11.00

Speed rpm : 1145...1155

2nd rack travel in: 4.00

Speed rpm : 1205...1215
3rd rack travel in: 4.00
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 4.6

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 550...610

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.00...12.10
2nd speed rpm : 700
Rack travel in m: 13.90...14.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 151.0...154.0
1000 s: (148.5...156.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (125.0...155.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 12.0...16.0
1000 s: (9.5...18.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

Adjustment without torque-control
spring retainer with 1 mm less
Start-of-delivery mark = 12,5° after
start of delivery cyl. 1. rque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 x
Edition : 14.01.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 876 348

Injection pump
Pump designation : PES6A100D410RS2754
EP type number : 0 410 806 002
Governor
Governor design. : RSV400...1100A2C2204
-2L

Governer no. : 9 420 234 177

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466 TT

1st version kW : 124.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50...10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.00...11.10

Del.quantity cm3/ : 10.5...10.7

100 s: (10.3...10.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.2...1.6

100 s: (0.9...1.8)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 105.0...107.0

1000 : (103.0...109.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 44...52

Testing:

1st rack travel in: 10.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1205...1215
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 4.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 560...620

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.00...11.10
2nd speed rpm : 700
Rack travel in m: 12.10...12.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del. quantity cm³/ : 127.5...130.5
1000 s: (125.0...133.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 130.0...150.0
1000 s: (125.0...155.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 4.90...5.10
Del. quantity cm³/ : 12.0...16.0
1000 s: (9.5...18.5)

Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

Adjustment without torque-control
spring retainer with 1 mm less
Start-of-delivery mark = 12,5° after
start of delivery cyl. 1. rque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CAS 8,3 a 9
 Edition : 5.5.88
 Replaces : 12.74
 Test oil : ISO-4113

Combination no. : 0 401 276 029

Injection pump
 Pump designation : PES6A9SD42OLS3024
 Governor
 Governor design. : RSV375...1100A2B659
 DR

Customer-spec. information
 Customer : CASE

Engine : A 504 BDT

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : WS 187P (CASE)

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 9 681 230 706

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.5(0.75)

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.35...12.45

Del. quantity cm3/ : 13.6...13.8
 100 s: (13.4...14.0)

Spread cm3 : 0.4
 100 s: (-)

2nd speed rpm : 375
 Rack travel in mm : 5.80...6.00
 Del. quantity cm3/ : 1.6...2.2
 100 s: (-)

Spread cm3 : -
 100 s: (-)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del. quantity : 136.0...138.0
 1000 : (134.0...140.0)

Spread cm3 : 4.0
 1000 : (-)

RATED SPEED

1st version
 Control lever
 position degrees: 39...47

Testing:
 1st rack travel in: 11.35
 Speed rpm : 1140...1155
 2nd rack travel in: 3.60
 Speed rpm : 1180...1220
 4th rack travel in: 1280
 Speed rpm : 0.20...1.20

LOW IDLE 1

Control lever
 position degrees: 15...23
 Setting point w/out bumper spring

Speed rpm : 375
Rack travel in mm : 5.90

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 375
Rack travel in mm : 5.80...6.00
Speed rpm : 550
Maximum rack travel: 1.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.35...12.45
2nd speed rpm : 750
Rack travel in m: 12.65...12.75
3rd speed rpm : 400
Rack travel in m: 12.90...13.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 144.0...147.0
1000 s: (142.0...149.0)
Spread cm3 : -
1000 s: (-)
Speed rpm : 650
Del.quantity cm3/ : <147.0
1000 s: (-)

BREAKAWAY

1st version

1mm rack travel less than

full load rack travel: 11.35
Speed rpm : 1140...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...140.0
1000 s: (-)

HIGH IDLE

1st version

Speed rpm : 1200
Del.quantity cm3/ : 21.0...27.0
1000 s: (-)

LOW IDLE

Speed rpm : 375

Del.quantity cm3/ : 16.5...22.5
1000 s: (-)

Remarks:

: 2470

Adjustment without torque-control
spring retainer with 1 mm less
APPLICATION travel. Increase in
Tractor (tractor engines) torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 b5
Edition : 06.04.88
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 286V
Injection pump
Pump designation : PE6P100A32ORS100V
EP type number : 0 411 806 123
Governor
Governor design. : RQV250...1100PA232/2
R
Governor no. : 0 421 813 134
Customer-spec. information
Customer : VOLVO

Engine : T(H)D 100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Test nozzle holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test lines : 1 680 750 004
Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27
Prestroke mm : 2.60...2.70
(2.55...2.75)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700
Rack travel in mm : 13.00...13.10
Del. quantity cm3/ : 14.5...14.7
100 s : (14.3...14.9)
Spread cm3 : 0.4
100 s : (0.6)
2nd speed rpm : 250.0
Rack travel in mm : 5.9...6.1
Del. quantity cm3/ : 1.1...1.5
100 s : (0.8...1.7)
Spread cm3 : 0.2
100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1100
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Aneroid pressure h: 500
Del. quantity : 145.0...147.0
1000 : (143.0...149.0)
Spread cm3 : 4.00
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 43...51

Testing:
1st rack travel in: 12.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 7.60
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 320...380

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 500
Rack travel mm : 13.00...13.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.80...11.00
2nd pressure hPa : 240
Rack travel in m: 12.70...12.90
3rd pressure hPa : 80
Rack travel in m: 11.20...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del. quantity cm3/ : 105.0...107.0
1000 s: (103.0...109.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1140...1150

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10
Del. quantity cm3/ : 11.0...15.0
1000 s: (8.5...17.5)
Spread cm3 : 2.50
1000 s: (5.00)

Remarks:

;

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,6 a
Edition : 29.04.88
Replaces : 11.85
Test oil : ISO-4113

Combination no. : 0 401 846 494

Injection pump
Pump designation : PE6P100A72ORS473
EP type number : 0 411 806 196
Governor
Governor design. : RQ300/1100PA269-1
Governor no. : 0 421 801 237

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 355

1st version kW : 177.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.70...12.80

Del. quantity cm³/ : 12.5...12.7

100 s: (12.3...12.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 8.1...8.3

Del. quantity cm³/ : 1.7...2.3

100 s: (1.4...2.5)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 13.40...13.90

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 125.0...127.0

1000 : (123.0...129.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 13.6

Testing:

1st rack travel in: 11.70

Speed rpm : 1145...1160

2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1350
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.1

Testing:

Speed rpm : 200
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 6.00...6.30
Rack travel in mm : 2.00
Speed rpm : 350...390

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 115.0...119.0
1000 s: (112.5...121.5)
Spread cm3 : 5.00
1000 s: (7.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

;

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 8,8 l
Edition : 06.04.88
Replaces : 11.3.88
Test oil : ISO-4113

Combination no. : 0 401 846 499

Injection pump
Pump designation : PE6P120A320RS474
EP type number : 0 411 826 134
Governor
Governor design. : RGV275...1200PA425-3
Governor no. : 0 421 813 441

Customer-spec. information
Customer : RVI

Engine : MIDS062030

1st version kW : 168.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 11.90...12.00

Del. quantity cm³/ : 15.1...15.3

100 s : (14.8...15.6)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 5.4...5.6

Del. quantity cm³/ : 1.5...2.1

100 s : (1.2...2.4)

Spread cm³ : 0.8

100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 275
travel mm : 1.20...1.40

2nd speed rpm : 400
travel mm : 2.90...3.40

3rd speed rpm : 900
travel mm : 5.80...6.00

4th speed rpm : 1200
travel mm : 7.80...8.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1250

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h : 700

Del. quantity : 151.0...153.0

1000 : (148.0...156.0)

Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 62...70

Testing:

1st rack travel in: 10.90
Speed rpm : 1265...1275
2nd rack travel in: 4.00
Speed rpm : 1380...1410
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 66...74

Testing:

Speed rpm : 200
Minimum rack travel: 9.10
Speed rpm : 275
Rack travel in mm : 6.30...6.50

CONSTANT REGULATION

Speed rpm : 275...360

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.90...12.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.70...10.80
2nd pressure hPa : 195
Rack travel in m: 11.60...11.70
3rd pressure hPa : 175
Rack travel in m: 11.10...11.30

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750

M03

Del.quantity cm3/ : 139.0...145.0
1000 s: (136.0...148.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 94.0...96.0
1000 s: (91.0...99.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.90
Speed rpm : 1265...1275

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 105.0...125.0
1000 s: (101.0...129.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 6.30...6.50
Del.quantity cm3/ : 15.0...21.0
1000 s: (12.0...24.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

Start-of-delivery mark at the "INJ"
marking

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,6 y6
 Edition : 11.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 537
 Injection pump
 Pump designation : PE6P120A32ORS415-1
 EP type number : 0 411 826 123
 Governor
 Governor design. : RQ250/1000PA417-7
 Governor no. : 0 421 801 382

Customer-spec. information
 Customer : DAF

Engine : DKZ 1160

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

MD4

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.50...12.60

Del. quantity cm³/ : 20.6...20.8

100 s : (20.3...21.1)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del. quantity cm³/ : 1.4...2.0

100 s : (1.1...2.3)

Spread cm³ : 0.8

100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h : 700

Del. quantity : 206.0...208.0

1000 : (203.0...211.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 15.8

Testing:

1st rack travel in: 11.50

Speed rpm : 1035...1050

2nd rack travel in: 4.00

Speed rpm : 1100...1130

4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.5

Testing:

Speed rpm : 100
Minimum rack trave: 7.70
Speed rpm : 250
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 450...490

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 12.70...12.80
2nd speed rpm : 990
Rack travel in m: 12.60...12.80

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 12.50...12.60

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.30...10.50
2nd pressure hPa : 340
Rack travel in m: 11.80...11.90
3rd pressure hPa : 280
Rack travel in m: 10.60...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del. quantity cm3/ : 140.0...142.0
1000 s: (137.0...145.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1035...1050

STARTING FUEL DELIVERY

MOS

Speed rpm : 100
Del. quantity cm3/ : 305.0...345.0
1000 s: (305.0...345.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.40...6.60

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,6 y7
 Edition : 11.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 538
 Injection pump
 Pump designation : PE6P120A32ORS415-1
 EP type number : 0 411 826 123
 Governor
 Governor design. : RQ250/1100PA417-8
 Governor no. : 0 421 801 383

Customer-spec. information
 Customer : DAF

Engine : DKV 1160

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

MO6

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 11.00...11.10

Del. quantity cm³/ : 16.7...16.9

100 s: (16.4...17.2)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del. quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 700

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 650

Aneroid pressure h: 700

Del. quantity : 167.0...169.0

1000 : (164.0...172.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 700

Rack travel in mm : 15.8

Testing:

1st rack travel in: 8.90

Speed rpm : 1130...1145

2nd rack travel in: 4.00

Speed rpm : 1180...1210

4th rack travel in: 1300

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.3

Testing:

Speed rpm : 100

Minimum rack travel: 7.20

Speed rpm : 250

Rack travel in mm : 6.20...6.40

Rack travel in mm : 2.00

Speed rpm : 440...480

TORQUE CONTROL

Dimension a mm : 0.77

Torque control curve - 1st version

1st speed rpm : 650

Rack travel in m: 11.20...11.30

2nd speed rpm : 1090

Rack travel in m: 9.90...10.10

3rd speed rpm : 825

Rack travel in m: 10.70...10.90

4th speed rpm : 900

Rack travel in m: 10.30...10.60

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 600

Pressure hPa : 700

Rack travel mm : 11.00...11.10

Measurement

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 9.80...10.00

2nd pressure hPa : 290

Rack travel in m: 10.70...10.90

3rd pressure hPa : 260

Rack travel in m: 10.20...10.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 1090

Del. quantity cm3/ : 153.0...157.0

1000 s: (150.0...160.0)

Aneroid pressure h: -

Speed rpm : 600

Del. quantity cm3/ : 135.0...137.0

1000 s: (132.0...140.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.90

Speed rpm : 1130...1145

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm3/ : 320.0...360.0

1000 s: (320.0...360.0)

Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250

Rack travel in mm : 6.20...6.40

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 a
Edition : 25.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 544

Injection pump
Pump designation : PE6P100A82OLS130
EP type number : 0 411 806 179
Governor
Governor design. : RQ250/1050PA627-1
Governor no. : 0 421 801 407

Customer-spec. information
Customer : ENASA

Engine : 95 A1 BZ,

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.80...2.90
(2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 11.8...12.0
100 s : (11.6...12.2)

Spread cm³ : 0.3
100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.9...8.1

Del. quantity cm³/ : 1.8...2.2
100 s : (1.5...2.4)

Spread cm³ : 0.3
100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Del. quantity : 118.0...120.0
1000 : (116.0...122.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version

Setting point:
Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.00
Speed rpm : 1095...1110

2nd rack travel in: 4.00
Speed rpm : 1140...1170

4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 350...390

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00

Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 118.0...133.0

1000 s: (114.0...137.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Remarks:

:

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 b
Edition : 25.03.88
Replaces : 15.1.88
Test oil : ISO-4113

Combination no. : 0 401 846 546

Injection pump
Pump designation : PE6P100A820LS130
EP type number : 0 411 806 179
Governor
Governor design. : RQV250...1050PA807-1
Governor no. : 0 421 813 665

Customer-spec. information
Customer : ENASA

Engine : 95 A1 BX,

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 11.9...12.1

100 s: (11.7...12.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.9...8.1

Del. quantity cm³/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 0.90...1.30

2nd speed rpm : 350

travel mm : 1.60...2.20

3rd speed rpm : 700

travel mm : 4.40...5.00

4th speed rpm : 1095

travel mm : 7.90...8.10

5th speed rpm : 1185

travel mm : 8.80...9.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1120

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Del. quantity : 119.0...121.0

1000 : (117.0...123.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 41...49

Testing:
1st rack travel in: 11.00
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 10...18

Testing:
Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 250...400

START CUT-OUT

Speed 1/min : 170 (150)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.00
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 260.0...280.0
1000 s: (256.0...284.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

:

APPLICATION
Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 c
Edition : 25.03.88
Replaces : 12.2.88
Test oil : ISO-4113

Combination no. : 0 401 846 547

Injection pump
Pump designation : PE6P110A82QLS513
EP type number : 0 411 816 174
Governor
Governor design. : RQV250...1000PA811
Governor no. : 0 421 813 556

Customer-spec. information
Customer : ENASA

Engine : 95 R1 AX

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.20...3.30
: (3.15...3.25)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.80...12.90

Del. quantity cm³/ : 17.6...17.8

100 s : (17.3...18.1)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...6.8

Del. quantity cm³/ : 1.8...2.3

100 s : (1.5...2.5)

Spread cm³ : 0.4

100 s : (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.00...1.40

2nd speed rpm : 400

travel mm : 2.20...2.80

3rd speed rpm : 650

travel mm : 4.50...5.10

4th speed rpm : 1050

travel mm : 8.50...8.70

5th speed rpm : 1140

travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1040

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Aneroid pressure h : 900

Del. quantity : 176.0...178.0

1000 : (173.0...181.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 41...49

Testing:
1st rack travel in: 11.80
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 9...17

Testing:
Speed rpm : 100
Minimum rack travel: 8.20
Speed rpm : 250
Rack travel in mm : 6.60...6.80

CONSTANT REGULATION
Speed rpm : 250...380

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 12.80...12.90
2nd speed rpm : 700
Rack travel in m: 13.30...13.50
3rd speed rpm : 850
Rack travel in m: 13.00...13.20

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.00...13.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.80...11.20
2nd pressure hPa : 440
Rack travel in m: 12.50...12.60
3rd pressure hPa : 290
Rack travel in m: 11.50...11.70

START CUT-OUT

Speed 1/min : 170 (150)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 600
Del.quantity cm3/ : 178.0...182.0
1000 s: (175.0...185.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.80
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION
Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10.1 d
Edition : 25.03.88
Replaces : 12.2.88
Test oil : ISO-4113

Combination no. : 0 401 846 549

Injection pump
Pump designation : PE6P100A820LS503
EP type number : 0 411 806 197
Governor
Governor design. : RQV250...1000PA811
Governor no. : 0 421 813 556

Customer-spec. information
Customer : ENASA

Engine : 95 T1 AX,BX

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 14.20...14.30

Del. quantity cm³/ : 16.5...16.7

100 s : (16.3...16.9)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.7...7.9

Del. quantity cm³/ : 1.8...2.2

100 s : (1.5...2.4)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.40

2nd speed rpm : 400
travel mm : 2.20...2.80

3rd speed rpm : 650
travel mm : 4.50...5.10

4th speed rpm : 1050
travel mm : 8.50...8.70

5th speed rpm : 1140
travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1040

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Aneroid pressure h : 900

Del. quantity : 165.0...167.0

1000 : (163.0...169.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 42...50

Testing:
1st rack travel in: 13.20
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 9...17

Testing:
Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 250...350

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 980
Rack travel in m: 14.20...14.30
2nd speed rpm : 700
Rack travel in m: 14.70...14.90
3rd speed rpm : 850
Rack travel in m: 14.40...14.60

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 14.50...14.70

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.90...13.30
2nd pressure hPa : 400
Rack travel in m: 14.10...14.20
3rd pressure hPa : 300
Rack travel in m: 13.40...13.60

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 700
Del. quantity cm³/ : 170.0...174.0
1000 s: (168.0...176.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 130.0...132.0
1000 s: (127.0...135.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack travel: 13.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 180.0...200.0
1000 s: (176.0...204.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10.1 e
Edition : 25.03.88
Replaces : 11.3.88
Test oil : ISO-4113

Combination no. : 0 401 846 552

Injection pump
Pump designation : PE6P100A82OLS503-1
EP type number : 0 411 806 198
Governor
Governor design. : RQ250/1000PA352-1
Governor no. : 0 421 801 412

Customer-spec. information
Customer : ENASA

Engine : 95 T1 AZ,CZ

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.80...2.90
: (2.85...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 14.20...14.30

Del.quantity cm³/ : 16.5...16.7

100 s : (16.3...16.9)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.8...8.0

Del.quantity cm³/ : 1.8...2.2

100 s : (1.5...2.4)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Aneroid pressure h : 900

Del.quantity : 165.0...167.0

1000 : (163.0...169.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in : 13.20

Speed rpm : 1045...1060

2nd rack travel in : 4.00

Speed rpm : 1100...1130

4th rack travel in : 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : 0.40

Torque control curve - 1st version

1st speed rpm : 1000

Rack travel in m: 14.20...14.30

2nd speed rpm : 700

Rack travel in m: 14.70...14.90

3rd speed rpm : 850

Rack travel in m: 14.40...14.60

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Pressure hPa : 900

Rack travel mm : 14.60...14.90

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 12.90...13.30

2nd pressure hPa : 400

Rack travel in m: 14.10...14.20

3rd pressure hPa : 300

Rack travel in m: 13.40...13.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900

Speed rpm : 700

Del.quantity cm3/ : 170.0...174.0

1000 s: (168.0...176.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 130.0...132.0

1000 s: (127.0...135.0)

BREAKAWAY

1st version

M17

1mm rack travel less than

full load rack tr: 13.20

Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 150.0...170.0

1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,6 y8
 Edition : 06.04.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 846 553

Injection pump
 Pump designation : PE6P120A320RS415-1
 EP type number : 0 411 826 123
 Governor
 Governor design. : RQ250/1100PA417-9
 Governor no. : 0 421 801 431

Customer-spec. information
 Customer : DAF

Engine : DKX ATI

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 11.60...11.70

Del. quantity cm³/ : 18.7...18.9

100 s: (18.4...19.2)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.7...6.9

Del. quantity cm³/ : 1.4...2.0
 100 s: (1.1...2.3)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 700

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 700

Del. quantity : 187.0...189.0
 1000 : (184.0...192.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 700

Rack travel in mm : 15.8

Testing:

1st rack travel in: 10.60

Speed rpm : 1125...1140

2nd rack travel in: 4.00

Speed rpm : 1190...1220

4th rack travel in: 1300

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.5

Testing:

Speed rpm : 100
Minimum rack trave: 7.40
Speed rpm : 250
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 450...490

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 11.80...11.90
2nd speed rpm : 1080
Rack travel in m: 11.70...11.90

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 11.60...11.70

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.30...10.50
2nd pressure hPa : 300
Rack travel in m: 11.30...11.40
3rd pressure hPa : 250
Rack travel in m: 10.60...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del. quantity cm3/ : 140.0...142.0
1000 s: (137.0...145.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1125...1140

STARTING FUEL DELIVERY

M19

Speed rpm : 100
Del. quantity cm3/ : 305.0...345.0
1000 s: (305.0...345.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.40...6.60

Remarks:

:

APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 12,0 i
 Edition : 07.03.88
 Replaces : 24.7.87
 Test oil : ISO-4113

Combination no. : 0 401 846 773

Injection pump
 Pump designation : PE6P120A320RS3116
 EP type number : 0 411 826 727
 Governor
 Governor design. : RQV250...102SPA657
 Governor no. : 0 421 813 368

Customer-spec. information
 Customer : VOLVO

Engine : TD120G

1st version kW : 242.7
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1,50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.40...11.50

Del. quantity cm³/ : 19.6...19.8

100 s: (19.3...20.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 5.5...5.7

Del. quantity cm³/ : 1.8...2.3

100 s: (1.5...2.5)

Spread cm³ : 0.5

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.10...1.30

2nd speed rpm : 500

travel mm : 4.10...4.90

3rd speed rpm : 700

travel mm : 6.30...6.70

4th speed rpm : 900

travel mm : 6.30...6.70

5th speed rpm : 1025

travel mm : 7.30...7.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1080

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 700

Del.quantity : 196.5...198.5
1000 : (193.5...201.5)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 59...67

Testing:
1st rack travel in: 10.40
Speed rpm : 1085...1095
2nd rack travel in: 4.00
Speed rpm : 1145...1175
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 100
Minimum rack travel: 7.00
Speed rpm : 250
Rack travel in mm : 5.50...5.70
Rack travel in mm : 2.00
Speed rpm : 350...410

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.40...11.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.00...9.10
2nd pressure hPa : 450
Rack travel in m: 11.20...11.30
3rd pressure hPa : 170
Rack travel in m: 9.30...9.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 151.0...153.0
1000 s: (148.0...156.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1085...1095

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 240.0...270.0
1000 s: (236.0...274.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.50...5.70
Del.quantity cm3/ : 18.0...23.0
1000 s: (15.5...25.5)
Spread cm3 : 5.00
1000 s: (7.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 e 3
 Edition : 19.4.88
 Replaces : 4.85
 Test oil : ISO-4113
 Combination no. : 0 401 846 801
 Injection pump
 Pump designation : PE6P120A320LS3810-10
 Governor
 Governor design. : RQV350...1150PA720

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 421 A

1st version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6,00X1,50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 4.00...4.10
 : (3.95...44.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1-6-3-5-2-4

Phasing : 0-75-120-195-240-315
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.00...11.10

Del. quantity cm³/ : 16.3...16.5

100 s : (16.0...16.8)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 350

Rack travel in mm : 4.80...5.00

Del. quantity cm³/ : 1.4...2.0

100 s : (-)

Spread cm³ : 0.8

100 s : (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.60...0.90

2nd speed rpm : 580

travel mm : 3.60...3.70

3rd speed rpm : 870

travel mm : 5.20...5.30

4th speed rpm : 1150

travel mm : 7.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1250

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 700

Del. quantity : 163.0...165.0

1000 : (160.0...168.0)

Spread cm³ : 5.0

1000 : (9.0)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:
1st rack travel in: 10.00
Speed rpm : 1175...1185
2nd rack travel in: 4.00
Speed rpm : 1280...1290
4th rack travel in: 1360
Speed rpm : 0.00...1.50

LOW IDLE 1
Control lever
position degrees: 7...15

Testing:
Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 350
Rack travel in mm : 4.80...5.00

CONSTANT REGULATION
Speed rpm : 350...500

TORQUE CONTROL
Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 11.00...11.10
2nd speed rpm : 850
Rack travel in m: 11.30...11.50
3rd speed rpm : 950
Rack travel in m: 11.10...11.20

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.30...11.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.80...11.00
2nd pressure hPa : 450
Rack travel in m: 11.10...11.20

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 1150

Del.quantity cm³/ : 128.0...131.0 *
1000 s: (125.0...134.0)
Spread cm³ : 8.0
1000 s: (12.0)
Aneroid pressure h: 700
Speed rpm : 600
Del.quantity cm³/ : 170.0...176.0
1000 s: (167.0...179.0)
Spread cm³ : 8.0
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 146.0...148.0
1000 s: (143.0...151.0)
Spread cm³ : 8.0
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1175...1185

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:
* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 d3
Edition : 11.12.87
Replaces : 9.10.87
Test oil : ISO-4113

Combination no. : 0 401 846 842

Injection pump
Pump designation : PE6P120A32ORS3183-12
EP type number : 0 411 826 760
Governor
Governor design. : RQ250/1000PA832-1
Governor no. : 0 421 801 387

Customer-spec. information
Customer : DAF

Engine : WS 225

1st version kW : 225.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 11.30...11.40

Del. quantity cm³/ : 18.1...18.3

100 s: (17.8...18.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del. quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del. quantity : 181.0...183.0

1000 : (178.0...186.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 10.30

Speed rpm : 1035...1050

2nd rack travel in: 4.00

Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.8

Testing:

Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 11.50...11.60
2nd speed rpm : 1000
Rack travel in m: 11.40...11.60

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 11.30...11.40

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.10...10.30
2nd pressure hPa : 330
Rack travel in m: 11.00...11.10
3rd pressure hPa : 260
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600
Del. quantity cm3/ : 144.0...146.0
1000 s: (141.0...149.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.30

M25

Speed rpm : 1035...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del. quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 d
Edition : 25.03.88
Replaces : 7.3.88
Test oil : ISO-4113

Combination no. : 0 401 846 862

Injection pump
Pump designation : PE6P110A320RS3201
EP type number : 0 411 816 753
Governor
Governor design. : RQ250/1050PA218-1
Governor no. : 0 421 801 406

Customer-spec. information
Customer : ENASA

Engine : 96 A4 AZ

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
: (3.15...3.25)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 12.5...12.7

100 s: (12.2...13.0)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 7.9...8.1

Del. quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Del. quantity : 125.0...127.0

1000 : (122.0...130.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.00

Speed rpm : 1095...1110

2nd rack travel in: 4.00

Speed rpm : 1140...1170

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 290...330

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00

Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 143.0...163.0

1000 s: (139.0...167.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Remarks:

:

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 d8
Edition : 07.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 874

Injection pump
Pump designation : PE6P120A32ORS3183
EP type number : 0 411 826 754
Governor
Governor design. : RQ250/1000PA832
Governor no. : 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 259

1st version kW : 259.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.80...12.90

Del. quantity cm3/ : 21.3...21.5

100 s: (21.0...21.8)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del. quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del. quantity : 213.0...215.0

1000 : (210.0...218.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 11.80

Speed rpm : 1035...1050

2nd rack travel in: 4.00

Speed rpm : 1125...1155
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.8

Testing:

Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 13.10...13.20
2nd speed rpm : 1000
Rack travel in m: 13.00...13.20

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.80...12.90

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.20...10.40
2nd pressure hPa : 460
Rack travel in m: 12.20...12.30
3rd pressure hPa : 250
Rack travel in m: 10.80...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600
Del. quantity cm³/ : 145.0...147.0
1000 s: (142.0...150.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80

N01

Speed rpm : 1035...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del. quantity cm³/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 e8
 Edition : 07.03.88
 Replaces : -
 Test oil : ISO-4117

Combination no. : 0 401 846 875

Injection pump
 Pump designation : PE6P120A320RS3183Y
 EP type number : 0 411 826 778
 Governor
 Governor design. : RQV250...1000PA851
 Governor no. : 0 421 813 604

Customer-spec. information
 Customer : DAF

Engine : WS 282

1st version kW : 282.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.40...13.50

Del. quantity cm³/ : 22.8...23.0

100 s : (22.5...23.3)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del. quantity cm³/ : 1.4...2.0

100 s : (1.1...2.3)

Spread cm³ : 0.8

100 s : (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.40...1.60

2nd speed rpm : 400

travel mm : 3.20...3.60

3rd speed rpm : 800

travel mm : 5.80...6.20

4th speed rpm : 1000

travel mm : 7.90...8.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1025

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del. quantity : 228.0...230.0

1000 : (225.0...233.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 51...59

Testing:

1st rack travel in: 12.40

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1130...1160

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 16...24

Testing:

Speed rpm : 100

Minimum rack travel: 8.30

Speed rpm : 250

Rack travel in mm : 6.60...7.00

CONSTANT REGULATION

Speed rpm : 275...385

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 600

Pressure hPa : 1000

Rack travel mm : 13.40...13.50

Measurement

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 10.20...10.40

2nd pressure hPa : 520

Rack travel in m: 12.60...12.70

3rd pressure hPa : 280

Rack travel in m: 11.00...11.20

START CUT-OUT

Speed 1/min : 200 (220)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600

Del. quantity cm3/ : 145.0...147.0

1000 s: (142.0...150.0)

N03

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.40

Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm3/ : 260.0...300.0

1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 6.60...7.00

Del. quantity cm3/ : 14.0...20.0

1000 s: (11.0...23.0)

Spread cm3 : 8.00

1000 s: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,9 e9
 Edition : 07.03.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 846 876

Injection pump
 Pump designation : PE6P120A320RS3183Z
 EP type number : 0 411 826 777
 Governor
 Governor design. : RQV250...1000PA851-1
 Governor no. : 0 421 813 605

Customer-spec. information
 Customer : DAF

Engine : WS 225

1st version kW : 225.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 19.9...20.1

100 s: (19.6...20.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 6.6...7.0
 Del.quantity cm3/ : 1.4...2.0
 100 s: (1.1...2.3)
 Spread cm3 : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.40...1.60
 2nd speed rpm : 400
 travel mm : 3.20...3.60
 3rd speed rpm : 800
 travel mm : 5.80...6.20
 4th speed rpm : 1000
 travel mm : 7.90...8.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1025
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 850
 Aneroid pressure h: 1000
 Del.quantity : 199.0...201.0
 1000 : (196.0...204.0)
 Spread cm3 : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 50...58

Testing:
1st rack travel in: 11.10
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 16...24

Testing:
Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00

CONSTANT REGULATION
Speed rpm : 275...385

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.10...12.20

Measurement
Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.30...10.50
2nd pressure hPa : 370
Rack travel in m: 11.70...11.80
3rd pressure hPa : 240
Rack travel in m: 10.80...11.00

START CUT-OUT

Speed 1/min : 200 (220)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 600
Del. quantity cm3/ : 147.0...149.0
1000 s: (144.0...152.0)

NOS

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del. quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 e7
 Edition : 07.03.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 846 877

Injection pump
 Pump designation : PE6P120A32ORS3183
 EP type number : 0 411 826 754
 Governor
 Governor design. : RQV250...1000PA851-2
 Governor no. : 0 421 813 606

Customer-spec. information
 Customer : DAF

Engine : WS 259

1st version kW : 259.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.80...12.90

Del.quantity cm3/ : 21.3...21.5

100 s: (21.0...21.8)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.40...1.60

2nd speed rpm : 400

travel mm : 3.20...3.60

3rd speed rpm : 800

travel mm : 5.80...6.20

4th speed rpm : 1000

travel mm : 7.90...8.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1025

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del.quantity : 213.0...215.0

1000 : (210.0...218.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 11.80
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 16...24

Testing:
Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00

CONSTANT REGULATION
Speed rpm : 275...385

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.80...12.90

Measurement
Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.20...10.40
2nd pressure hPa : 460
Rack travel in m: 12.20...12.30
3rd pressure hPa : 250
Rack travel in m: 10.80...11.00

START CUT-OUT

Speed 1/min : 200 (0)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 600
Del. quantity cm3/ : 145.0...147.0
1000 s: (142.0...150.0)

N07

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.80
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del. quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 d9
Edition : 07.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 878

Injection pump
Pump designation : PE6P120A32ORS3183Z
EP type number : 0 411 826 777
Governor
Governor design. : RQ250/1000PA832-1
Governor no. : 0 421 801 387

Customer-spec. information
Customer : DAF

Engine : WS 225

1st version kW : 225.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.10...12.20

Del. quantity cm3/ : 19.9...20.1

100 s: (19.6...20.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del. quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del. quantity : 199.0...201.0

1000 : (196.0...204.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 11.10

Speed rpm : 1035...1050

2nd rack travel in: 4.00

Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.8

Testing:

Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 12.40...12.50
2nd speed rpm : 1000
Rack travel in m: 12.30...12.50

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.10...12.20

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.30...10.50
2nd pressure hPa : 370
Rack travel in m: 11.70...11.80
3rd pressure hPa : 240
Rack travel in m: 10.80...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600
Del. quantity cm³/ : 147.0...149.0
1000 s: (144.0...152.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.10

N09

Speed rpm : 1035...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del. quantity cm³/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 s 9
 Edition : 22.04.88
 Replaces : 18.12.87
 Test oil : ISO-4113

Combination no. : 0 401 846 880

Injection pump
 Pump designation : PE6P110A32OLS3835-1
 EP type number : 0 411 816 755
 Governor
 Governor design. : RQ300/1050PA187-19
 Governor no. : 0 421 801 428

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 160,0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1,50X600

(A) Injection pump setting values
 insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 13.00...13.10

Del. quantity cm³/ : 12.6...12.8

100 s: (12.2...13.0)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 8.8...9.0

Del. quantity cm³/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.60...14.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del. quantity : 126.0...128.0

1000 : (122.5...130.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 14.0

Testing:

1st rack travel in: 12.00

Speed rpm : 1095...1110

2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1300
Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.9

Testing:

Speed rpm : 200
Minimum rack travel: 8.50
Speed rpm : 300
Rack travel in mm : 6.80...7.00
Rack travel in mm : 2.00
Speed rpm : 400...440

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050
Del. quantity cm³/ : 138.0...142.0
1000 s: (135.0...145.0)
Spread cm³ : 7.00
1000 s: (10.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 12,2 a
 Edition : 26.02.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 882
 Injection pump
 Pump designation : PE6P120A32ORS3206-1
 EP type number : 0 411 826 775
 Governor
 Governor design. : RQ750PA783-1
 Governor no. : 0 421 801 432

Customer-spec. information
 Customer : VOLVO-PENTA

Engine : TAMD 122 A

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3,50...3,60
 : (3,45...3,65)
 Rack travel in mm : 9,00...12,00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.40...12.50

Del. quantity cm³/ : 29.7...29.9

100 s: (29.4...30.2)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.1...5.3

Del. quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 297.0...299.0

1000 : (294.0...302.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 21...29

Testing:

1st rack travel in: 11.40

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 776...789

4th rack travel in: 850

Speed rpm : 0.00...1.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.40
Speed rpm : 750...755

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 290.0...320.0
1000 s: (286.0...324.0)

Remarks:

:

APPLICATION
Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0q13
 Edition : 29.04.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 883
 Injection pump
 Pump designation : PE6P110A32ORS3108-1
 EP type number : 0 411 816 757
 Governor
 Governor design. : RQV250...1100PA649
 Governor no. : 0 421 813 346

Customer-spec. information
 Customer : VOLVO

Engine : THD 102 KB

1st version kW : 212.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.90...14.00

Del. quantity cm³/ : 18.3...18.5

100 s : (18.0...18.8)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del. quantity cm³/ : 3.0...3.4

100 s : (2.7...3.6)

Spread cm³ : 0.3

100 s : (0.6)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.10...1.30

2nd speed rpm : 500

travel mm : 4.10...4.90

3rd speed rpm : 700

travel mm : 6.30...6.70

4th speed rpm : 950

travel mm : 6.30...6.70

5th speed rpm : 1100

travel mm : 7.00...7.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1175

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h : 1200

Del. quantity : 183.0...185.0

1000 : (180.0...188.0)

Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:

1st rack travel in: 12.90
Speed rpm : 1130...1140
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 7...15

Testing:

Speed rpm : 100
Minimum rack travel: 6.80
Speed rpm : 250
Rack travel in mm : 5.30...5.50

CONSTANT REGULATION

Speed rpm : 250...425

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 13.90...14.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 235
Rack travel in m: 10.00...10.10
3rd pressure hPa : 870
Rack travel in m: 13.50...13.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del. quantity cm3/ : 111.5...114.5
1000 s: (109.0...117.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.90
Speed rpm : 1130...1140

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 160.0...190.0
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.30...5.50
Del. quantity cm3/ : 30.0...34.0
1000 s: (27.5...36.5)
Spread cm3 : 3.00
1000 s: (6.00)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

Delivery-valve spring pre-tension =
2.40...2.60 mm.

Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 s11
 Edition : 25.03.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 846 889

Injection pump
 Pump designation : PE6P110A32OLS3835-1
 EP type number : 0 411 816 755
 Governor
 Governor design. : RGV300...900PA524-10
 Governor no. : 0 421 813 549

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 441

1st version kW : 150.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 900
 Rack travel in mm : 12.90...13.00
 Del. quantity cm3/ : 12.6...12.8
 100 s : (12.3...13.0)
 Spread cm3 : 0.4
 100 s : (0.8)

2nd speed rpm : 300.0
 Rack travel in mm : 8.7...8.9
 Del. quantity cm3/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm3 : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 320
 travel mm : 1.50...1.70
 2nd speed rpm : 400
 travel mm : 2.30...2.70
 3rd speed rpm : 945
 travel mm : 8.30...8.70
 4th speed rpm : 1000
 travel mm : 9.40...10.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 920
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 900
 Del. quantity : 126.0...128.0
 1000 : (123.5...130.5)

Spread cm³ : 4.00
1000 : (8.00)

Remarks:

RATED SPEED

1st version
Control lever
position degrees: 50...58

Testing:
1st rack travel in: 11.90
Speed rpm : 955...965
2nd rack travel in: 4.00
Speed rpm : 1010...1040
4th rack travel in: 1100
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 16...24

Testing:
Speed rpm : 100
Minimum rack trave: 9.50
Speed rpm : 300
Rack travel in mm : 8.00...8.20

CONSTANT REGULATION
Speed rpm : 300...500

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm³/ : 124.0...128.0
1000 s: (121.0...131.0)
Spread cm³ : 6.00
1000 s: (8.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 955...965

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DA0 14,5 a
Edition : 26.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 848 084

Injection pump
Pump designation : PE8P110A520/SLS851
EP type number : 0 411 818 046
Governor
Governor design. : RQ900PA887
Governor no. : 0 421 801 433

Customer-spec. information
Customer : DAEWOO

Engine : D2848T

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5- 4-
 1

Phasing : 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 16.0...16.3

 100 s: (15.7...16.5)

Spread cm3 : 0.4

 100 s: (0.7)

2nd speed rpm : 250.0
Rack travel in mm : 4.9...5.1
Del.quantity cm3/ : 1.8...2.3
 100 s: (1.5...2.5)
Spread cm3 : 0.4
 100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 850
Del.quantity : 160.0...163.0
 1000 : (157.5...165.5)
Spread cm3 : 4.00
 1000 : (7.50)

RATED SPEED

1st version

Testing:
1st rack travel in: 10.60
Speed rpm : 900...905
2nd rack travel in: 4.00
Speed rpm : 940...955
4th rack travel in: 1000
Speed rpm : 0.00...1.00

STARTING FUEL DELIVERY

Speed rpm : 100

Remarks: :
:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,6 a 4
 Edition : 11.03.88
 Replaces : 18.9.87
 Test oil : ISO-4113

Combination no. : 0 401 848 755

Injection pump
 Pump designation : PE8P110A32QLS3802-10
 EP type number : 0 411 818 710
 Governor
 Governor design. : RQ300/1150PA437-3
 Governor no. : 0 421 801 230

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0,75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 750

 Rack travel in mm : 11.30...11.40

 Del.quantity cm3/ : 9.9...10.1

 100 s: (9.6...10.3)

 Spread cm3 : 0.4

 100 s: (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 8.2...8.5
 Del.quantity cm3/ : 1.4...2.0
 100 s: (1.1...2.2)
 Spread cm3 : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 650
 Rack travel in mm : 13.20...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Del.quantity : 99.0...101.0
 1000 : (96.5...103.5)
 Spread cm3 : 4.00
 1000 : (7.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 650
 Rack travel in mm : 13.6

Testing:
 1st rack travel in: 10.00

Speed rpm : 1195...1210
2nd rack travel in: 4.00
Speed rpm : 1255...1285
4th rack travel in: 1350
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.1

Testing:

Speed rpm : 100
Minimum rack trave: 8.50
Speed rpm : 300
Rack travel in mm : 7.00...7.20
Rack travel in mm : 2.00
Speed rpm : 400...440

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 11.30...11.40
2nd speed rpm : 1150
Rack travel in m: 11.00...11.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1150
Del.quantity cm3/ : 112.0...116.0
1000 s: (109.0...119.0)
Spread cm3 : 7.00
1000 s: (10.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1195...1210

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 c 7
Edition : 25.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 848 781

Injection pump
Pump designation : PE8P110A32OLS3842
EP type number : 0 411 818 714
Governor
Governor design. : RQ300/950PA827-6K
Governor no. : 0 421 803 098

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 206.0
Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 950

Rack travel in mm : 13.60...13.70

Del. quantity cm³/ : 13.4...13.6

100 s: (13.1...13.8)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 8.8...9.0

Del. quantity cm³/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.90...2.20

2nd speed rpm : 500

travel mm : 5.50...5.60

3rd speed rpm : 775

travel mm : 6.20...6.40

4th speed rpm : 950

travel mm : 7.30...7.70

5th speed rpm : 1020

travel mm : 9.50...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 14.70...15.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 950

Del.quantity : 134.0...136.0
1000 : (131.5...138.5)
Spread cm3 : 4.00
1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600
Rack travel in mm : 15.2

Testing:

1st rack travel in: 12.50
Speed rpm : 995...1010
2nd rack travel in: 4.00
Speed rpm : 1055...1085
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 8.9

Testing:

Speed rpm : 200
Minimum rack travel: 11.50
Speed rpm : 300
Rack travel in mm : 8.80...9.00
Rack travel in mm : 3.00
Speed rpm : 480...530

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 950
Rack travel in m: 13.60...13.70
2nd speed rpm : 500
Rack travel in m: 12.90...13.10
3rd speed rpm : 750
Rack travel in m: 13.10...13.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm3/ : 117.0...120.0
1000 s: (114.0...123.0)
Spread cm3 : 8.00
1000 s: (11.0)
Speed rpm : 750
Del.quantity cm3/ : 122.0...126.0
1000 s: (119.0...129.0)
Spread cm3 : 8.00
1000 s: (11.0)

BREAKAWAY

N23

1st version
1mm rack travel less than

full load rack tr: 12.50
Speed rpm : 995...1010

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 I
Edition : 29.04.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 848 798

Injection pump
Pump designation : PE8P110A32OLS3846
EP type number : 0 411 818 717
Governor
Governor design. : RQ300/1050PA187-21
Governor no. : 0 421 801 438

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 213.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 13.50...13.60

Del.quantity cm³/ : 15.4...15.6

100 s: (15.1...15.8)

Spread cm³ : 0.5

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 8.8...9.4

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.80...14.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 154.0...156.0

1000 : (151.5...158.5)

Spread cm³ : 5.00

1000 : (8.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 14.2

Testing:

1st rack travel in: 12.50

Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1125...1155
4th rack travel in: 1300
Speed rpm : 0.00...2.50

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 9.1

Testing:

Speed rpm : 200

Minimum rack trave: 10.50

Speed rpm : 300

Rack travel in mm : 9.00...9.20

Rack travel in mm : 2.00

Speed rpm : 370...430

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750

Del.quantity cm3/ : 128.0...132.0

1000 s: (125.0...135.0)

Spread cm3 : 8.00

1000 s: (13.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.50

Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...160.0

1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 18,3 h
Edition : 07.03.88
Replaces : 2.12.86
Test oil : ISO-4113

Combination no. : 0 401 849 714

Injection pump
Pump designation : PE10P120A32OLS3829
EP type number : 0 411 829 703
Governor
Governor design. : RQV350...900PA815
Governor no. : 0 421 813 557

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 423 LA

1st version kW : 309.0
Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 10- 9- 4- 1- 8- 7-
 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
 216-261-288-333

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 880

Rack travel in mm : 10.80...10.90

Del. quantity cm3/ : 16.9...17.1

100 s: (16.6...17.4)

Spread cm3 : 0.5

100 s: (0.8)

2nd speed rpm : 350.0

Rack travel in mm : 4.5...4.8

Del. quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350

travel mm : 1.10...1.30

2nd speed rpm : 400

travel mm : 1.70...2.10

3rd speed rpm : 600

travel mm : 3.10...4.20

4th speed rpm : 900

travel mm : 8.20...8.40

5th speed rpm : 970

travel mm : 9.30...10.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 900

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 880
Aneroid pressure h: 700
Del.quantity : 169.0...171.0
1000 : (166.0...174.0)
Spread cm3 : 5.00
1000 : (8.00)

RATED SPEED

1st version

Control lever
position degrees: 58...66

Testing:

1st rack travel in: 9.80
Speed rpm : 915...925
2nd rack travel in: 4.00
Speed rpm : 945...975
4th rack travel in: 1050
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 5...13

Testing:

Speed rpm : 100
Minimum rack travel: 6.50
Speed rpm : 350
Rack travel in mm : 4.50...4.80

CONSTANT REGULATION

Speed rpm : 350...450

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : -
Rack travel mm : 9.90...10.20

Measurement

Speed 1/min : 500

1st pressure hPa : 420

Rack travel in m: 10.40...10.60

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

N27

Aneroid pressure h: 700

Speed rpm : 600

Del.quantity cm3/ : 166.0...170.0
1000 s: (163.0...173.0)

Spread cm3 : 8.00
1000 s: (12.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 138.0...140.0
1000 s: (135.0...143.0)

Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.80

Speed rpm : 915...925

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

: